Safety Statement Consistency
Dear customers,
Darfon Electronics Corp. is a company located in Taiwan. Our products sold in the market are developed based on innovated ideas and structures. The following is the description of the product:

Product: **Pedal-assisted electric bicycle, E-Bike**

Function: **Pedelec**

Model: **BESV JF1**

This product is designed based on unified European standards and observes applicable and important EU directives. The EU directives involved are shown below, including any amendments that are in place:

- 2006/42/EC on machinery, including EN 15194:2009 + AI:2011 + IEC 62133:2002
- EMC Directive 2004/108/EC, including EN 15194:2009 + AI:2011
- 2006/42/EC on machinery, including EN 15194:2017

The battery charger of the product is described as follows:

Product: **Battery charger**

Function: **Battery charger for the electric bike**

Model: **BESV-072-0360**

The product is designed and manufactured based on EU, USA and Australian Communications and Media Authority (ASMA) standards, as well as relevant and important directives of EU.

- EU Low-Voltage Directive IEC 60335 and Electromagnetic Compatibility Directive EN 55014
- USA Directive UL 1012 and FCC Part 15B
- Australian RCM Directive AS/NZS CISPR-14

Modification of this bike without our prior approval will render the warranty invalid. PS: Darfon Electronics Corp. is short for Darfon Electronics Corp. Corporation.

Original instruction

Introduction Start Riding

It is advised to read this user's manual thoroughly and familiarize yourself with the operations of the bike before riding it for the first time. Please follow the instructions and warning provided in this manual. Failure to do so may lead to damage to the bike or risk of your personal safety. This user's manual provides you quick and accurate understanding of the major functions of your electric bike.
Your bike may be somewhat different from the descriptions and images depending on model, order, country or optional accessories. Darfon Electronics Corp. is committed to constantly innovation of craftsmanship and products, and reserves the rights for changes in following parts, such as design, electronic system and features of equipment or technology. If you are to sell your bike to another user, please pass this manual onto him/her. Darfon Electronics Corp. and its team hope to bring you safe and pleasant riding experience.

Environmental Protection Topics

Environmental protection topics are part of green product policy published by Darfon Electronics Corp.. The purpose is to encourage cautious use of natural resources, which are the building blocks of the plant we live on, and to take the needs of nature and human being 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. In addition, it is advised to keep in mind the potential influences of how the bike is used and how you ride the bike on environmental protection.

How the bike is used
- Make sure the tire pressure is normal.
- Do not carry extra weight that is unnecessary
- Pay attention to battery consumption
- Riding the bike as it is intended to helps protect the environment
- Have an authorized professional distributor perform repair or service to your bike.

How you ride your bike
- Ride the electric bike carefully and keep a proper safe distance with the vehicle in the front.
- Avoid frequent, sudden acceleration.

A reminder for environmental protection: Recycle the waste battery for greener world. Please go to an authorized bike distributor for repair and service.

Production Information

Darfon Electronics Corp. recommends you to use the power controller system, gear change system, brake system, drive system and electric bike parts recognized and approved by Darad Innovation. Darfon Electronics Corp. has a series of rigorous tests and verification processes on these systems and electric bike parts to ensure the reliability, safety and comfort of the product. Darfon Electronics Corp. is not in the position to evaluate other parts despite existing survey reports available in the market. Therefore, Darfon Electronics Corp. is not responsible for using these parts on our products. Do not use parts that are not approved by Darfon Electronics Corp., as they may compromise the safety of you riding the bike.

Approved parts and replacement service, as well as technical advices, are available at professional distributors authorized by Darfon Electronics Corp.. In a professional sense, these parts are fit for your electric bike.

User'sManual

Please read this manual carefully before riding this bike for the first time, and allow yourself to familiarize with this bike. For the safety and longevity of your electric bike, please follow the instructions and warnings given in this manual. Failure to do so may result in damage of the bike or risk of your safety.

You may select an electric bike that meets your specific needs based on the model and standards provided in the manual, but there may be slight differences depending on countries. In some cases, your bike may not have all the features described for it due to system, function and safety. Therefore, your bike may be somewhat different from the descriptions and images. For any question regarding the bike itself and how it is operated, please consult with your professional distributor authorized by Darfon Electronics Corp.. The following are covered in the delivery of the electric bike:

- Battery
- Charger
- User's manual

Ride Safely

- Important safety warning
- Accidents or falling objects
- Tipping over of bike

The following ways of riding may lead to sudden malfunction of parts; for example:

- Damage of handle bar or saddle when riding the electric bike
- Malfunctioning brake

These present the risks of accident and injury. When something like this happens, it is important to have your bike checked by a professional distributor authorized by Darfon Electronics Corp. immediately. When riding the electric bike, the bike is subject to heavy loads and wearing. Parts respond to these loads differently, and fatigue and wears are possible at various speeds. If the life cycle expires, the part may fail suddenly and there is a risk of accident or injury.

- Please have a professional distributor authorized by Darfon Electronics Corp. perform routine checkups on your bike.
- Check for signs of cracks, scratches or color change, since any of these are indications that the part may be expired.
- Have a professional distributor authorized by Darfon Electronics Corp. replace the fatigued or worn part(s).

Parts that may be compromised are:

- Handlebars and stem
- Saddle and seat post
- Frame and fork
- Tyres and wheels
- Pedals and Pedalcranks
- Brake Pads and discs
- Chain
- Battery

The electric bike and the power controller system may cease to function if handled incorrectly. Modification to the power controller system may lead to the inability to correct the system back to normal and eventually malfunction. A power controller system that does not work properly will compromise your safety while riding the electric bike. Therefore, you should always go to a professional distributor authorized by Darfon Electronics Corp. for service of used and malfunctioned parts.

Do not perform any servicing or machining work on the bicycle frame or any of the load-bearing parts on your own, such as drilling, welding or forging. These behaviors will impact the service life of the parts and the stability of use. In addition, part of your body or clothing may be caught in moving or rotating parts such as wheels, chain, pedals or pedal cranks. Make sure that any part of your body, clothing or objects you are carrying will not be caught in these parts as they are moving or rotating. Also, scarf is not recommended.

A few parts on this bicycle may become very hot after braking, such as the braking system, front fork quick release, fast rotating electronic control system and the nut on the axle, particularly after long hours of riding. Touch these parts only after they cool down. It is not allowed to ride the e- bike without an operational lighting system. This is the law in many countries.

Qualified and Authorized Professional Ser vice

A professional distributor that is qualified and authorized 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. Therefore, it is advised to go to a qualified and authorized distributor 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
- Darfon Electronics 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.

Correct Use

Familiarize yourself with the following information before riding your electric bike:

- Safety notes given in the user's manual
- Technical data provided in the user's manual
- Traffic regulations and rules
- Legal and safety standards regarding electric bikes

The structure of the e-bike should comply with the regulations of your country when you bought it. Or, it may be illegal in your country to ride this e-bike. The structure of this bicycle may be adjusted to the regulations of individual country if necessary. Please read thoroughly the laws and regulations applicable to e-bikes for the following key points:

- The power output of the motor and the maximum aided speed
- Accessories required to ride on highway
- Obligation to have a license
- The minimum age to ride an electric bike legally
- Requirement to wear a helmet while riding

The e-bike is designed for riding on roads and alleys with asphalt pavement. The tires maintain their traction on such a pavement. However, this bicycle is not designed to ride or jump over obstacles such as the curbs on roadsides. Similarly, it is not designed to carry more than one (1) person, i.e. no passenger other than the rider him/herself. Besides, it is not a racing bicycle .

The e-bike is capable of carrying 95kg (209lbs) including the rider, accessories and luggage. Do not carry more than the total weight allowed. The BESV e-bike is not designed to be a towing vehicle, nor allowed to ride behind a towing vehicle, tow another bike or pull another bike with a bike linking system.

Make sure that your e-bike is used correctly as it is intended. If the bike is not used in the way it is designed to, the parts may break down, leading to accident or injury.

The e-bike is not intended to set limits on the size, senses or intelligence of certain people. However, children under 14 are not recommended to ride this bike.

rear-mounted or portable design. Therefore, please remove the battery before the bicycle is transported. In addition, it is recommended to remove parts that cannot be fastened with bolts before transportation, such as the gauge, as they may become loose and missing during the transportation.

Electric Bike

The electric bike of Darfon Electronics Corp. is an electrically assisted bike that provides assistance when you are pedaling. The rpm sensor located on the pedal crank bearing detects how hard you are pedaling the bike and determines how much power the motor should provide to give you a ride. The electric motor is turned off as soon as you stop pedaling. At the maximum aided speed, the motor starts to reduce its power output until the aided pedals are turned off. For example, the maximum aided speed is 25km/hr (15.5mph) in European countries. You may ride faster than this maximum aided speed if you turn off the assisted pedaling function.

Torque sensor on the Bearing of Pedal Cranks

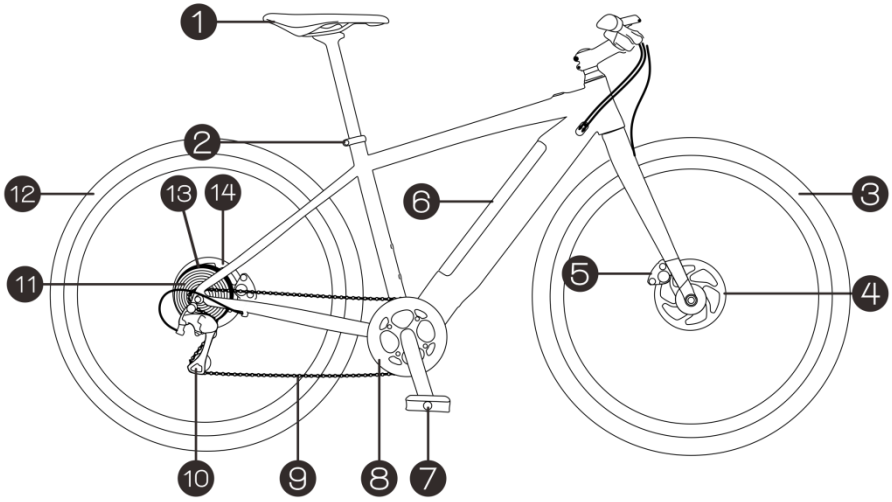
The torque sensor that determines the pedaling force may lose its electronic calibration and that leads to the malfunctioning of assisted pedaling. Therefore, keep magnetic and metal objects, such as a hammer, away from the crank bearing.

The Serial Number of New Darfon Electronics Corp. Bike is in the Warranty Card

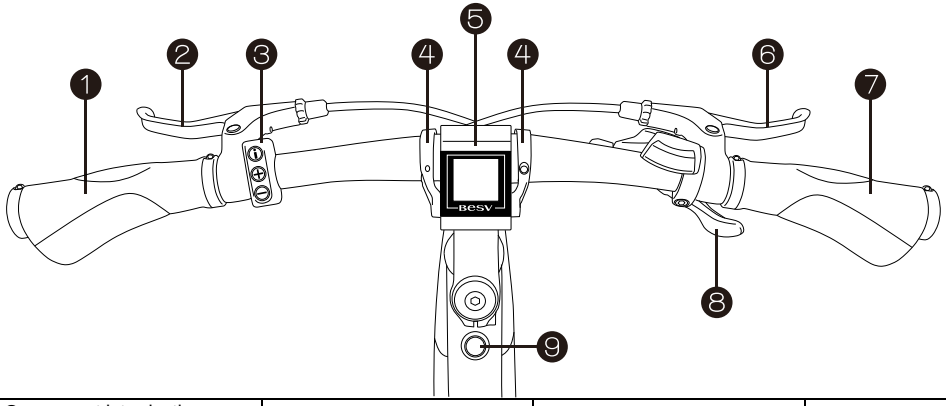
The serial number of your new Darfon Electronics Corp. bike and its frame number validate your after- sale (warranty) service. Therefore, check that the serial numbers of the bike and the frame are intact when you are going to buy a bike. Do not buy a bike with a sign that these numbers are tampered with!

- The new bike serial number is found in the warranty card.
- The frame serial number is found on the base of bottom bracket shell, the rear drop-out of the frame, or downtube.

JF1 Over View

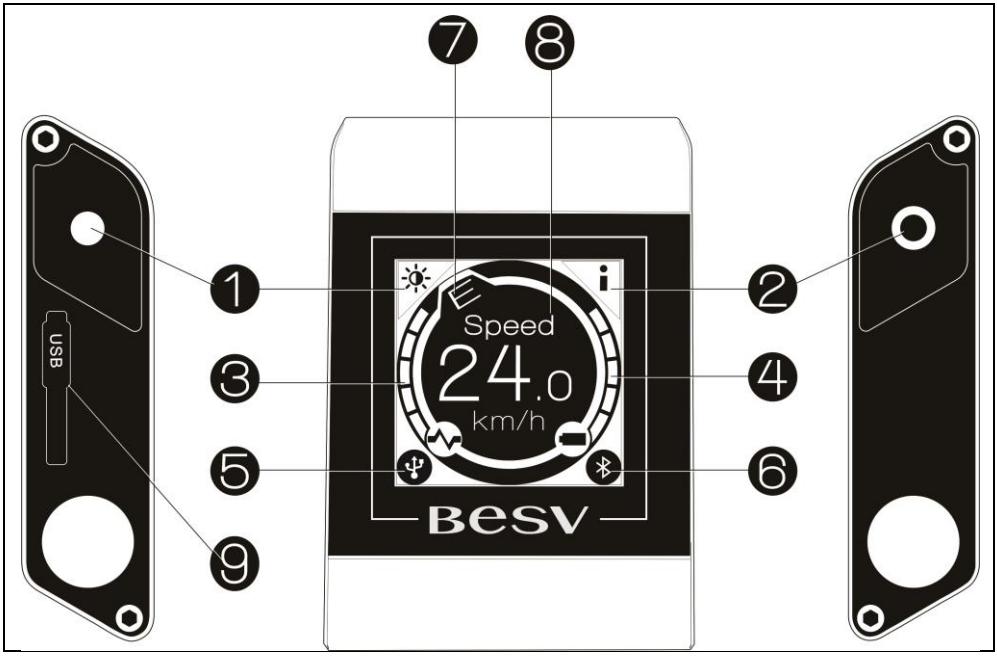


Component introduction:							
1.	Saddle	**2.**	Seat post clamp	**3.**	Front wheel	**4.**	Front brake DISC
5.	Front brake caliper	**6.**	Battery	**7.**	Pedal	**8.**	Chainwheel set
9.	Chain	**10.**	Rear derailleur	**11.**	Freewheel	**12.**	Rear wheel
13.	Electric motor	**14.**	Rear brake caliper	**15.**	Rear brake caliper		



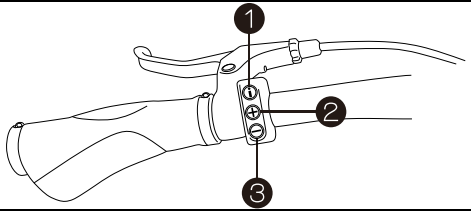
Component introduction:							
1.	Left handle bar	2.	Rear brake lever	3.	Function switch	4.	HMI bracket
5.	HMI	6.	Front brake lever	7.	Right handle bar	8.	Derailleur lever
9.	Power button						

HMI Instuction:



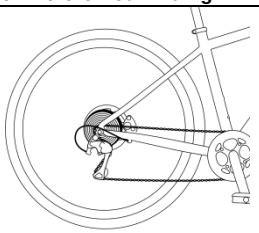
1. Backlight adjustment	2. System-setup button	3. Assistance power indicator	4. Battery capacity
5. USB-charging indicator	6. Bluetooth-connection indicator	7. Assistance mode	8. Riding information
9. USB charging port			

Assistance adjustment



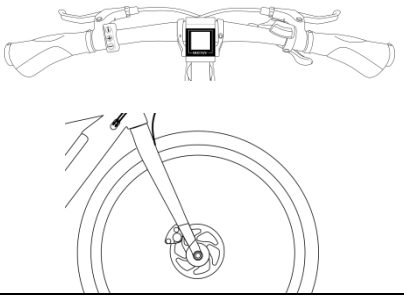
Function
1. Change riding information / Setting entrance
2. Assistance mode +
3. Assistance mode –

Inspection Before Your Riding



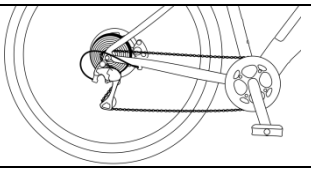
Tire and Wheel Inspection

- Before your riding, please check the tire pressure and notice that there is any objective pierced the tires.
- The tire pattern will be obvious.



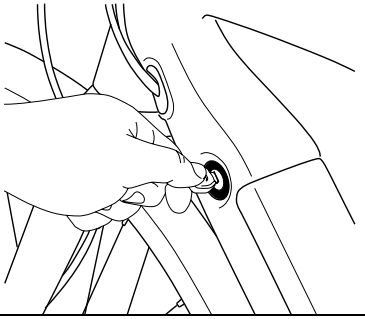
Brake System Inspection

• Before your riding, please test the function of brake system. When you pull the brake lever, the brake force should work and the space should be kept between the brake lever and the grip.
• Any mud or grease on disks is forbiddened.
• All screws ahould be mounted on the positions.



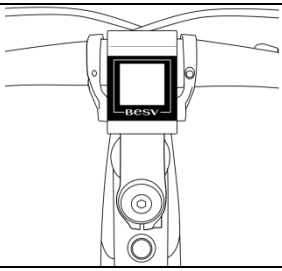
Chain Inspection

• Before your riding, please check the chain is exactly mounted onto the chainwheel or freewheel.
• Please follow the instruction to prevent damage of the chain system when the chain is settled down or removed.



Battery and the lock inspection

• Before your riding, please check the battery is locked and the indicator show “Lock”.



Power on/off inspection

- Sytem On: Long press the power button. You can see thepower button shows in blue and HMI shows the start-up image.
- System Off: Long press the button until the light of power button off and the HMI shows the shut-down image.

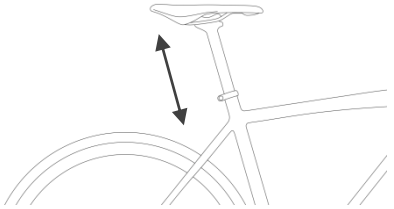
Alos, you could customize the riding information for yourself. Please follow the instruction as below:

Check the Bolted Parts

Check that the following parts are tightly secured every time before you ride a bike:

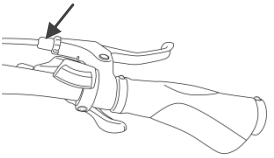
- Check the coupler of front wheel quick release is secured in place and the word “CLOSED” is clearly visible. It shall not rotate.
- Check that the rear wheel and motor are installed and secured properly. All bolted connections shall be fastened so tightly that they do not budge under extra pulling or pushing of the rear wheel.
- Check that handle bar and brake levers are secured in place. It shall be impossible to rotate the handle bar and brake levers.
- Make sure that the saddle and seat post are secured in place. The attempt to pull or incline the saddle shall not cause it to move.
- Check that the luggage carrier is secured in place.
- All bolted connections shall be fastened securely.

Adjustment



Saddle adjustment

- If you pull the seat post and the seat tube is too far away, the screw clamp may not support the seat post safely. Do not exceed the minimum insert depth when pulling the seat post.
- Adjust saddle height and position Minimum insert depth: the seat post has to be inserted at least 10cm (3.9”) into the seat tube no matter how it is marked
- Adjust the saddle position depends on yourself requirement, but do not exceed the mark on the saddle.



Handlebar and Grip Adjustment

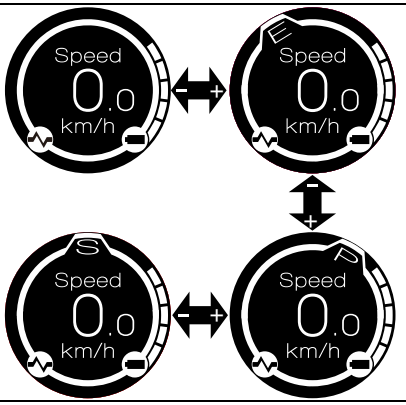
Adjust the grips, brake levers and gear change levers Adjust the handlebars so that they fit snugly in your hands, and move them to the position that fits you. Adjust the brake levers so that they make proper contact with the handlebars. A proper distance shall be kept between the handlebar and brake lever.The gear change lever is located below the handle bar where your thumb can easily control.

Function in Main page

• As battery remaining indicator, each section represents 20% capacity. For example, the remaining capacity was displayed as followings:
  5 sections : 100%
  1 section : 20%
  1 section with flashing : below 10%
  1 section with battery icon flashing : below 5%

• To adjust the backlight, please press the button which is at the side with icon.

• To change the different riding information, please press the button which at the side with icon.



Changing Assistance mode

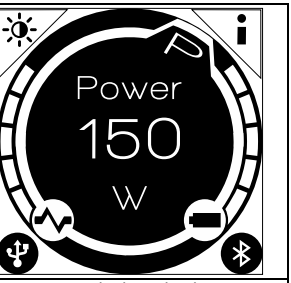
• The assistance mode can be changed by pressing the button "Assistance mode +" and "Assistance mode –" sequentially. The current mode can be distinguished by both letter symbol and colors.

'E' is for "ECO mode" with blue color
'S' is for "Smart mode" with purple color.
'P' is for "Power mode" with red color.

Riding Information:

• Speed : The speed of the bike.

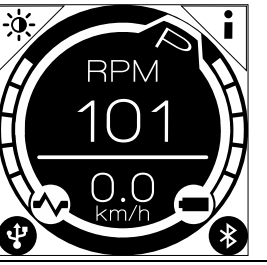
• ODO : Total experienced distance.



• Power : The inputting human power.

• Clock : The current time.

• Calorie : The exhausted calorie during a trip.

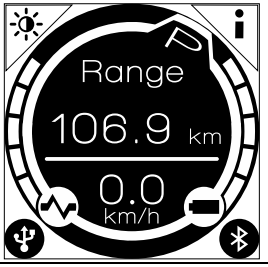


• RPM : The cycling cadence.

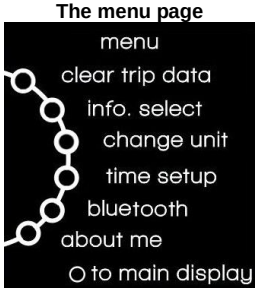
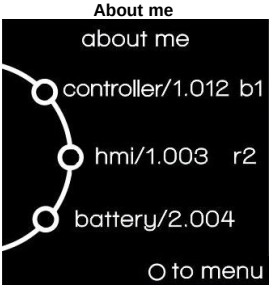
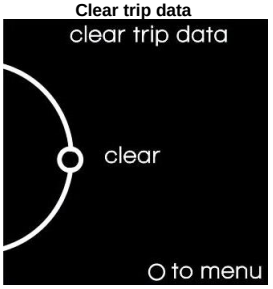
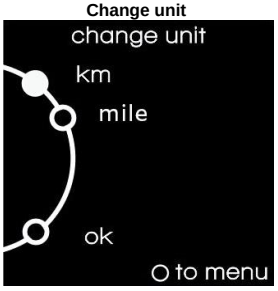
• MAX : The maximum speed during a trip.

• AVG : The average speed during a trip.

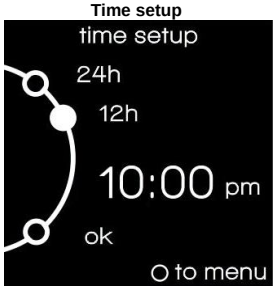
• Trip : A total distance during a trip.



• Range : A remaining range which is estimated by recent riding behavior and environment.

The menu page 	This page is a menu of all the function settings of system. • To enter this menu page, please long-pressing the information button . • After entering the menu page, you can use "assistance mode +" and "assistance mode –" to change the selection, and press the information button again to enter the next page. If you want to leave menu page, please move your selection to "to main display", and press the information button to return main page.
About me 	This function is to show the software information of controller, HMI and battery. • Move the selection to "to menu" and then press the information button go back main menu page.
Clear trip data 	This function is for clearing trip record • Move the selection to the "clear" and then press the information button . • Move the selection to "to menu" and then press the information button to go back main menu page. • Clearing trip data will also clear "calorie", "Max speed", "Average speed" information.
Change unit 	**This function is for changing the displayed unit.** • **Move the selection to the unit you want and then press the information button .** • **Move the selection to "to menu" and then press the information button go back main menu page.**

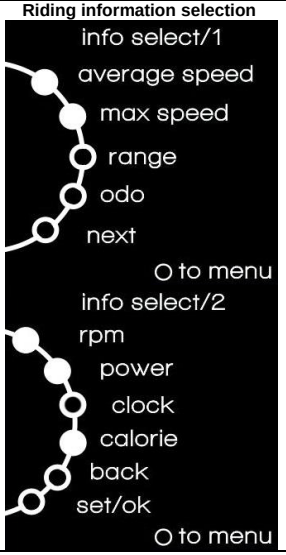
Time setup



This function is for changing 12/24 hours method to represent.

- **Move the selection to select "24h" or "12h" and then press the information button .**
- **Move the selection to the "hours" and then press the information button . The "hours" will start to flash and be able to adjusted by "assistance mode +" or "assistance mode –" buttons. When you finish the adjustment, please press the information button again to confirm.**
- **You can adjust the "minutes" as the same process as "hours".**
- **Move the selection to "ok" and then press the information button to finish the setting.**
- **Move the selection to "to menu" and then press the information button go back main menu page.**

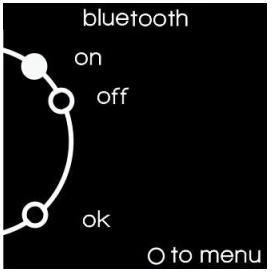
Riding information selection



By Info selection, you can multi-choose you mostly used information to show on main display.

- Move the selection to information you want, and then press the information button to select. You can do this repeatedly until all your necessary information is selected.
- You can choice page 1 and page 2 of info selection by select "next" and "back".
- Move the selection to "set/ok" and then press the information button to complete the setting.
- Move the selection to "to menu" and then press the information button go back main menu page.

Bluetooth



This function is to enable the Bluetooth to connect with smart phone device.

- Move the selection to select "on" to enable Bluetooth, or "off " to disable Bluetooth.
- Move the selection to "ok" and then press the information button to finish the setting.
- Move the selection to "to menu" and then press the information button go back main menu page.

Warning message 	• If the message is shown as "W" and followed by a number, it represents a warning code. • Please refer to the trouble shooting in the later chapter of this manual.
Error message 	• If the message is shown as "E" and followed by a number, it represents an error code. • Please refer to the trouble shooting in the later chapter of this manual.
• If more than 1 message existed, these messages will keep flash and alternatively displayed.	

The lower assistant adjusted condition:
The system will deudce the assistant level to protect the eleteric module uder the battery overloading or at high temperature.

Maintenance
Darfon Electronics Corp. recommends you to have your bike checked by an authorized professional distributor once every year.

Before ever y trip	Action
Check tires and wheels Check the chain Check the battery lock Check the operations of brake system Check the operations of power controller system and instrument Check the wearing of brake system Check bolt and screw connections	Test before riding

Ever y 300-500km (186-310 miles)	Action
Check the wearing of chain and tension of spokes. Clean the chain of smudge. Check all bolt and screw connections are fastened securely. Measure the wearing of brake discs.	Perform repair and maintenance works

Replacement of new brake padsBrake System
The Darfon Electronics Corp. Electrically Assisted Bikes are all equipped with mechanical disc brake of the same level. It brings you quick and safe stop if necessary. The disc brake reacts much quicker than drum brake particularly on slippery roads. The mechanical disc brake gives you very good braking results with only very little force from your hands. To evenly distribute the braking force in both wheels, please brake both wheels at the same time. The following are some notes for braking the bike:

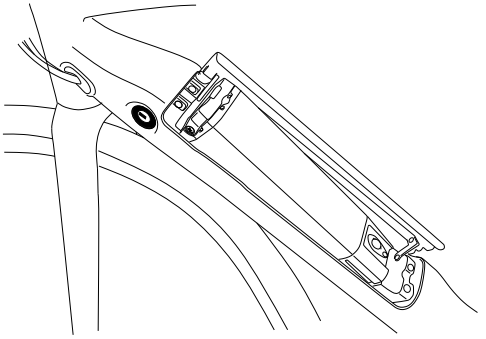
- On a slippery road, the friction is reduced between the surface and tires. The water reduces the braking effects of the brake shoes and disc. As a result, the braking distance will be longer and there is a risk of accident.
- When riding on a wet surface, brake early to keep a longer braking distance. Be extra careful not to allow the brake to lock the wheels up.
- The rear wheel may be airborne when you hit the front brake too hard, and there is a risk of accident.
- Always slow down or stop the bike with both the front and rear brakes. Carefully maintain your balance during a sudden brake.

The motor-assisted pedals are brake-controlled (or if you stop pedaling) for interruption. If you are not yet familiar with the braking power of the mechanical disc brake, please do so on a surface with good traction and away from traffic. Avoid braking consecutively. When on a long down slope, use both brakes in a steady burst of short braking actions. The brakes will cool down when you apply them intermittently. Stop the bike at any sign of overheating. The symptoms of overheating include extra braking force required, a concentration of burning smell and loud noises.
Allow the braking system to cool down before riding. A wet condition reduces the braking effect and easily causes the tires to skid.
Always keep a longer braking distance on a wet road surface. Ride slowly and brake carefully.

Wearing of Brake System
The wearing of brake shoes and discs is the result of friction. The more you ride the bike in a mountainous terrain or in rain or mud, the more worn the bike will be. The wearing of brake shoes and discs cannot be evaluated from the brake rods alone. Therefore, it is necessary to check before riding. Always go to a qualified distributor for replacement of brake shoes.

New brake shoes must be inserted when they reach their best braking performance. To do that, you need to accelerate the bike up to 25km/hr (15.5mph) and apply the brakes. The replacement is done when the force you apply to the brakes stop reducing

Battery



Install or Uninstall the battery

- Install: Please open the battery cover. Hold the battery and insert it by connector to connector. Please check the fixing, and then close the battery cover and turn the key to the "CLOSE".
  (note: if you install the battery correctly, there will be a sould "click")
- Uninstall: Please open the battery cover. Turn the key to "OPEN". Take out the battery form the chamber and close the battery cover.
- If the connection of the battery is not correct, there might be something dangerous. Be sure following the instruction to install the battery.

Battery Protection Mode

For any of the following, the battery will switch to the protection mode:

• The bike has not be used for two months.

• The battery has depleted and not charged within one week.

When the battery is in the protection mode, you need to start the battery after a complete charging cycle.

Notes for Battery

The following instructions help improve the longevity of battery:

• Ideally, the battery should be charged at 20°C (68°F). Please allow plenty of time for the battery to reach this temperature before charging.

• Avoid frequent discharging completely. It is preferred to discharge locally. Li batteries are not known for the memory effect. Loss of capacity after a period of use is common in every Li battery. The oxidation of cores occurs as the result of long period of use and aging, and leads to loss of capacity.

• Deep discharging of a battery will lead to irreversible damage and loss of capacity. If the battery is expected not to be used for an extended period of time, it is advised to charge the battery to its full capacity at least every 3 months.

Important Safety Notes for Batter y Charging

• If the power cable or plug is damaged, wet or dirty, there is a risk of electric shock or even mortal injury.

• Use only the battery charger delivered with the product.t.

• Use only dry charger, undamaged power cable and charger.

• Replace damaged power cable and charger immediately.

• Remove any possible foreign object from the charging socket, such as dusts, ice or snow before plugging in.

• Using any battery charger other than the one delivered with the product may cause overheating of the battery or even a risk of explosion.

• Deep discharging of battery may result in internal damage.

• There is a fire risk if the temperature of battery rises up to a dangerous level.

- Avoid deep discharging of battery while in use or storage.
- If not in use, the battery should be charged fully at least every 3 months.
- Do not expose the battery in a storage temperature lower than -20°C (-4°F) or higher than 60°C (140°F). Please note that the internal structure of battery may be overheated to damage due to high temperature greater than 60°C, particularly exposed to direct sunlight.
- Do not use the charger at a humid place or an ambient temperature lower than -10°C (14°F) or higher than 40°C (104°F).
- Do not put the battery in water.
- The battery and charger are maintenance-free. Do not attempt to disassemble or modify the battery or charger.
- Do not expose the battery to high voltage.
- It is advised not use battery with damaged casing.
- Keep the battery out of children's reach.
- 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
- The battery and charger should be placed on fire-retardant surface while charging is in progress. If you are charging the battery while it is still mounted on the bike, make sure that the bike is parked on an incombustible surface.
- Do not charge the battery while it is on a carpeted floor.
- Do not cover the battery or the charger while charging is in progress.

Notes for Battery Charger

The charger provided is suitable for voltage ranging from 100V to 240V. The charger does not have to be switched to the associated voltage range, as it detects the voltage automatically. There is no on/off switch on the charger. Make sure to unplug for energy saving if no charging is required.

Connect the Charger

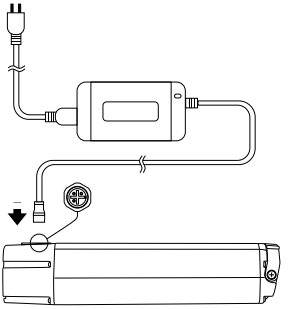
Connect the battery charger as illustrated. Connect the charger to the battery and the shining red indicator light on the charger indicates the charging is underway. It takes approximately 5 hours to fully charge the battery. Once the battery is charged, the green indicator light on the charger will light up. While the battery is being charged on the bike and you wish to check how much it is charged, you may turn the system on and the instrument will show the battery level. If you are done charging, disconnect the charger from the battery before removing the power plug from power socket.

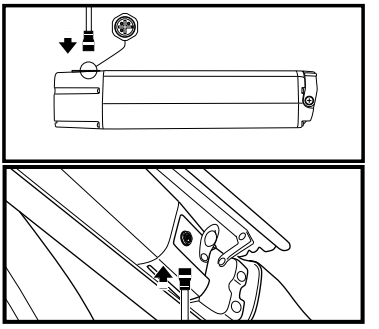
There is no on/off switch on the charger. Make sure to unplug for energy saving if no chargin is required.

Do not pedal the bike while the battery is being charged, or there is a risk of damaging the charging socket on the bike.

The battery can be charged onboard or independently.

Do not move or pedal the bike while the battery is being charged onboard.





Nameplate information

The control systems of Darfon electronic corp. have clear production records. The product's nameplate information can be obtained by scanning the QR Code on the product label.

JF1 HMI	
Manufacturer	Darfon Electronics Corp.
Address	No.167-1, Shanying Rd., Guishan Dist., Taoyuan City 333, Taiwan
Product	JF1 HMI, YTRT08/ YTRT11
Serial Number	Refer to the number below the bar code label for the HMI serial number
Years	Refer to the 14th to 15th numbers below the bar code label, these two numbers represent the year of HMI manufacture
Weight(g)	100
Serial Number	Refer to the number below the bar code label for the HMI serial number
Input Power	36V,250W

JF1 Controller I	
Manufacturer	Darfon Electronics Corp.
Address	No.167-1, Shanying Rd., Guishan Dist., Taoyuan City 333, Taiwan
Product	JF1 controller, YTRT08/ YTRT11
Serial Number	Refer to the number below the bar code label for the controller serial number
Years	Refer to the 14th to 15th numbers below the bar code label, these two numbers represent the year of controller manufacture
Weight(g)	370
Serial Number	Refer to the number below the bar code label for the HMI serial number
Input Power	36V,250W

Error code

Code	Description	Action
E01	Motor is stalled	Please carry the bike forward manually. If there is obvious obstruction, please change the motor. If it is smooth, please change the motor or controller to verify which parts is failed.
E02	Speed sensor is abnormal	Turn off the system and make sure the connectors connected well between the controller and motor. Turn on and do the riding test. If the error still occurs, please change the motor or controller to verify which parts is failed.
E04	The communication between controller and battery fails while power on	Generally it will be recovered automatically. If it happens frequently, please turn off the system, then remove the battery and check both connectors on the bike and battery. Install the battery and turn on the system. If the error occurs, please check the metal pin priority, and then update the HMI firmware. If the error still occurs, please change the battery or controller.
E05	Motor is driving hard	If it happens seldom while the bike is climbing uphill, it should be a normal protection. However if it always happens on flat road, please change motor or controller to verify which parts is failed.
E06	Battery report error	Turn off then turn on the system. If the error still occurs, please change the battery.
E07	Torque value is abnormal	Turn off then turn on the system. If the error still occurs, please change the pedaling sensor or controller to verify which parts is failed.
E08	Torque initial value is abnormal	If the feet are on the pedal while turning on the system, please keep feet away from the pedal. Turn off then turn on the system. If the error still occurs, please refer to the technical manual and use PC service interface to calibrate the pedaling sensor.
E09	Temperature is too high in the controller	Please turn off the system and wait for 60 minutes to cool down the system. Turn on the system, if the error still occurs, please change the controller.

E10	Voltage is too high in the controller	Turn off then turn on the system. If the error still occurs, please remove the battery measure the voltage. If the voltage is more than 42V, please change the battery, else please change the controller. (Different types of battery may have different appearance, please refer the (+) pin and (-) pin definition below) 
E11	Voltage is too low in the controller	Please charge the battery with the charger until battery is fully charged. If the error still occurs, please change the controller.
E12	Current is too large in the controller	Turn off then turn on the system. If the error still occurs, please change the controller.
E13	Battery is not ready to output	Please turn off the system; then turn it on again. If the error still occurs, please change the battery.
E16	Halls' arrangement is mismatch	Turn off the system and make sure the connectors connected well between controller and motor, then turn on. If the error still occurs, please change motor or controller to verify which parts is failed.
E56	HMI initial connection fail	Turn off then turn on the system. If the error still occurs, please change the HMI or controller to verify which parts is failed.
E57	The communication between HMI and controller fails.	Turn off then turn on the system. If the error still occurs, please change the HMI or controller to verify which parts is failed.
E82	Battery is OW (Open Wire) protection	Turn off then turn on the system. If the error still occurs, please change the battery.
E83	Battery is CU (Cell Unbalance) protection	Turn off then turn on the system. If the error still occurs, please change the battery.

Warning code

Code	Description	Action
W01	The communication between the controller and battery is not stable.	Generally it will be recovered automatically. If it happens frequently, please update the HMI with firmware (version 2.004S2 or higher), and replace a HMI with hardware (version 2.0 or higher). If no, please replace the HMI and update to new version firmware. Please remove the battery, and confirm the metal pin was drawn back or not. If yes, please change the abnormal parts. Install the battery and turn on the system. If the error still occurs, please change the battery or controller.
W02	Motion sensor of controller fails	Generally it will be recovered automatically. If it happens frequently, please update the HMI with firmware (version 2.004S2 or higher). If no, please update to new version firmware. Install the battery and turn on the system. If the error still occurs, please change the controller.
W03	The assistance is limited because of controller's temperature	The system can still work, but the power may be limited. You can keep using it, or turn off the assistance and wait for 30 minutes until the system cool down. If the warning still occurs after more than 2 hours, please change the controller.
W09	USB short circuit.	Remove the device which is charged by USB of HMI currently. If the error reset, the device may have some problem and consume too much current. Please do not use this device for charging again. If the error still occurs with other device, please change the HMI.

Operation Manual
A. Specification:
1. Input voltage : 100-240Vac 50/60Hz
2. Input current : 2A(max)
3. E_ciency : over 85%
4. Charging mode : with Constant Current & Constant Voltage
5. Output protection : a. Output short circuit protection
b. Charging limiting protection
c. Over Voltage protection
6. Temperature & Humidity : -10-40℃ & 10% -- 90%
7. Status LED display : Power on before connect to battery --- Green LED
Charging --- Red LED
Finish Charging --- Green LED
8. Dimension : Max --- 132*57*30(mm)
B. Trouble shooting :
When getting through AC power, please check the power green LED first
1. If the charger doesn't work, when the status green LED is on, please check as below:
a. If the output plug is well connected or is it with reverse polarity?
Please confirm the connection of the connector.
b. If the battery is out of use?
Please replace of the new battery
2. When power green LED is o_, please check ;
a. If the AC plug is well connected? Please confirm the connection of the AC plug
b. If the power switch is on? Please turn on the power switch before charging
c. If the charger broken? Please send back to repair
C. Attention :
1. The charger is designed for Li-ion battery only
2. Please operate charger in an open area to keep good ventilation
3. This charger is only for indoor used.
4. If there is any problem, please return to local dealer or services center
Do not try to open and repair the charger by yourself
Caution:
The appliance is not to be used by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction
Children being supervised not to play with the appliance
Specify the types, the number of cells and the rated capacity of the battery which can be charged;
Include a warning against recharging non-rechargeable batteries;