

# ***LEADER FOX***

## **Instructions for use of the e-bike**

The seller is legally obliged to include the instruction manual for the LEADER FOX electric bicycle with each product.

# **E – BIKE**

POWER RIDE

### **Family One**

# Foreword

Dear users,

To ensure the optimal functioning of your e-bike, please read the E-LF product information carefully before using it. By means of a conscientious description, we inform you in the following text about all details (including device installation, settings and normal use of the display) related to the use of our display. This manual will also help you to resolve any uncertainties and faults.



## What is an e-bike?

An electric bicycle is a classic bicycle with an electric drive to assist in riding. The motor function is activated by pedalling, which is sensed by a special sensor located in the pedalling centre. So you have to pedal all the time on the electric bike, the motor only helps you. You can also set the e-bike in motion using the control button or the accelerator, but only up to the maximum permitted speed, i.e. 6 km/h (e.g. for walking assistance). The maximum speed of a motor-assisted e-bike is 25 km/h with a tolerance of 10 % (when you reach this speed, the motor switches off and you continue pedalling as on a normal bicycle). When the battery runs out or the motor is switched off, you can ride the e-bike like a normal bicycle without any resistance.

An electric bicycle that complies with the European standard EN 15194-1 is treated as a normal bicycle in terms of road traffic law, i.e. you can ride on cycle paths, you do not need a driving licence and a helmet is only compulsory up to the age of 18.

# Electric bike range factors

1. The range of an e-bike cannot be accurately determined because it is influenced by many factors.
2. **Tyre rolling resistance.** LEADER FOX electric bikes use tyres with low rolling resistance and increased puncture resistance. It is also important that the tyres are properly inflated. So if you have under-inflated tyres on your e-bike, for example, your range will be reduced.
3. **Weight of the electric bike.** The lower the weight of the e-bike, the more range it has.
4. **Battery status.** It depends on whether the battery was fully charged before the ride. You should also take into account that the higher the number of discharge cycles the battery has had, the lower its capacity. Profile and surface of the route. The higher the elevation, the worse the surface and the steeper the hills, the shorter the range.
6. **Driving mode.** It depends on which of the driving modes you have set when driving.
7. **Air resistance.** It depends if you are riding a low-frame bike in an upright position or if you are riding a sportier bike and have the saddle set at the same height as the handlebars.
7. **Wind strength.** The stronger the wind at our backs, the longer the range and vice versa.
8. **Weight of rider and load.** The greater the weight, the shorter the range.
9. **External temperature** The lower the temperature, the lower the battery capacity.

# Safety recommendations

## Batteries:

Do not throw the battery into the fire. Do not use the battery with other devices. Do not disassemble or modify the battery.

Do not connect the positive and negative poles of the battery with a metal object. Do not immerse the battery in water.

## The charger:

Do not disassemble or modify the charger. Do not use to charge other batteries. Avoid impact and contact with water. Do not touch the charger with wet hands. Keep the charger out of reach of children and pets.

Do not cover the charger or place other things on top of it.

When disconnecting the charger, do not pull the cable but the plug. Do not use the charger if it is obviously damaged.

# Batteries

## Battery charging and maintenance:

Charge the battery in a dry environment to prevent damage from short circuits.

Charge the battery at least once every 3 months, even when the bike is not in use, to at least 60 % capacity.

Do not cover the battery or the charger.

Do not leave the battery connected to electricity at all times.

Do not use the battery for other appliances. It is made specifically for this model. Do not disassemble or modify the battery case.

Do not throw into fire or expose to extreme temperatures. The time to charge the battery from zero to 100 % is 1-5 hours.

## Warranty for the drive:

The warranty covers those parts of the drive that are not susceptible to rough handling (packaging, electronics, charger, etc.), these parts are covered by a 24-month warranty.

The warranty does not cover the chemical parts of the battery and the reduction in capacity caused by normal use (39 % after a period of two years), these parts are covered by a warranty of 12 months.

## Charging:

The battery is the most expensive part of an electric bike, so pay extra attention when handling, charging and storing it. The battery is sensitive to accurate charging, so for Li-ion batteries it is necessary to use only the charger we supply. Plug the charger into a 220/240 V mains supply, a 5 A fused circuit is sufficient. The charger itself will stop charging when all cells have reached full capacity.

We recommend that you always fully charge the battery after each journey to ensure that you always have a full battery capacity for your next journey. Charging the battery can take from 1 to 5 hours depending on the state of the battery cells.

It should be carried out in a covered, dry area (moisture and water can damage the charger) at a temperature of 5 to 40°C.

The charging process is indicated by a red LED on the charger. When the battery is charged and the charging process is complete, it will light up green. The battery contains a charge indicator light (the charge indicator light comes on when the charge indicator button is pressed). Switch off the battery after riding.

#### **Normal battery behaviour:**

If the engine stops running smoothly and starts running "jerkily", the battery may be too low. In this case, switch off the electric drive system and continue without motor assistance as on a normal bicycle.

Battery overheating is a common occurrence and is not a fault. The battery is protected by a temperature sensor and will automatically switch off in the event of excessive overheating. Wait for the battery to cool down to normal operating temperature and continue riding.

If you feel that the overall battery capacity has dropped, this could be due to charging or operation in nonideal weather conditions. Perform 3 full recharge cycles. Fully discharge the battery by driving and

then recharge to full capacity at room temperature.

If the status indicator shows that the battery is discharged, there is still a minimum voltage in the battery to protect it from damage, but it is not sufficient to power the e-bike. Recharge the battery as soon as possible. Never leave the battery completely discharged, as it could be damaged.

If the battery has been switched on for 30 minutes and the bike is not in use, it will switch off automatically.

**Proper care of the battery extends its life.**



Product Name:

Supplier:

Bafang

Model: DP C221.CAN BUS

Electrical parameters:

Storage space Humidity: 30-70%

Operating temperature - 20 ~ 45 °C

Storage temperature - 20 ~ 50 °C

## Functional overview

Remaining distance display (depending on driving style)

Information display (battery, controller, HMI and sensor)

Display of error messages

Bluetooth function

CALORIES energy consumption display

Setting support levels

Motor output power indicator

Backlight brightness setting

Lighting control

Battery capacity indicator

Speed display (including maximum and average speed, switching between km and miles)

## Description of OLED Displays:

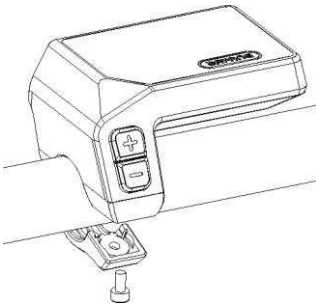
Kilometers/miles. Can be set according to customer preferences. Speed display: AVG SPEED, MAX SPEED, SPEED (real time). Smart Battery Indicator: provides a reliable battery indicator, will not fluctuate. With engine on/off. BMS support. (need access to BMS information system support). Backlight brightness setting: 5 sections. 9step PAS: 3-PAS/5-PAS/6-PAS/9-PAS... optional. Odometer: odometer/distance travelled/driving time Error code display Parameter setting: multiple parameters can be set via the USB port of the computer, including PAS level / wheel diameter / voltage / speed limit... Maximum range: Maximum range is calculated with a fully charged battery, on flat terrain and with a slight headwind. Average range is calculated with ideal mode switching and slightly hilly terrain

# Assembly and disassembly

## Mounting the display:

I must note that we are in a huge1.Remove the bracket from the display and then 2. Now connect the display connector to the display placed on the handlebars. (suitable for the EB-Bus connector. making sure that the two connectors remain parallel when pressed firmly together.k timeout.

22 mm handlebar



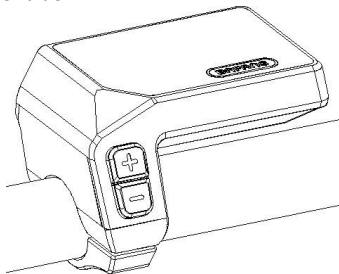
- 1 Real-time battery capacity display
- 2 Support/assistance level indicator
- 3 while walking

The following symbol will appear  on the display  
When The lights are on.

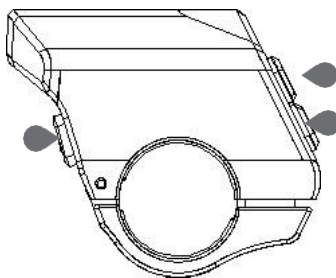
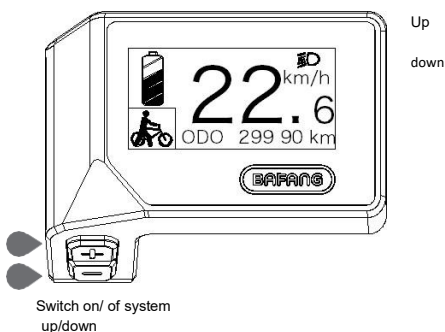
- 4 Bluetooth indicator
- 5 Speed unit
- 6 Digital speed display
- 7 Trip: Daily kilometres (TRIP)- Total number of kilometres (ODO) - Maximum speed (MAX) - Average speed (AVG) - Remaining distance (RANGE) - Energy consumption (CALORIES) - Power (POWER) - Travel time (TIME).

Service:Viz service section

3. Then place the bracket on the bottom of the display and tighten it with the M3.0\*8 screw. Required torque: Torque value: 1 N.m.



## Definition of keys



## Normal operation

### Switching the system on/off

Press and hold the button  (>2S) on the display, switch on the system. Press and hold the button again  (>2S) shut down the system.

If the "Auto Power Off Time" is set to 5 minutes (can be reset using the "Auto Power Off" function, see "Auto Power Off"), the display will automatically turn off within the desired time when not in use. If the password function is enabled, you must enter the correct password to use the system.

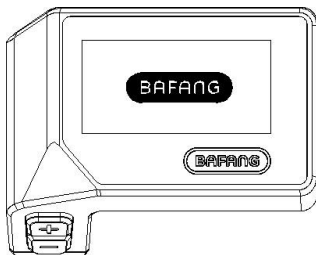
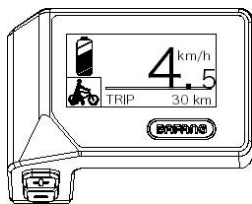
### Assistance with walks

Walking assistance can only be activated with a standing pedal.

Activation: press , until this symbol appears . Then press and hold button . The walking assistant is activated. The symbol will flash and the

 when the  
 pedelec

will move at approximately 4.5 km/h. After releasing the button  or no button is pressed during 5S, the motor automatically stops and switches back to level 0.



## SERVIS

When a certain number of kilometres have been covered or the battery has been charged, "SERVICE" will appear on the display. When the battery has been driven more than 5000 km (or 100 charge cycles), "SERVICE" will appear on the display. After every 5,000 km, the display will show "SERVICE" each time. This function can be set in the display settings.



## Battery capacity indicator

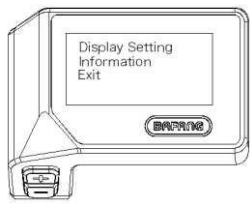
The battery capacity is shown in the top left corner of the display. Each full bar represents the remaining battery capacity in percentage.  
(as shown in the figure below):

| Capacity range | Indikátor                                                                           |
|----------------|-------------------------------------------------------------------------------------|
| 80%-100%       |  |
| 60%-80%        |  |

When the display is switched on, press and hold   (simultaneously) for input to the offer settings, Press the orthodox button  (<0,5S) you can highlight and select the option

Then press the button(<0,5S) to confirm  the selected option.  Setupdisplays , Information or Exit.

Or highlight "EXIT" and press the button  (<0,5S) return to the main menu, or highlight "BACK" and press (<0.5S) the button  (<0,5 S) turn back to settings ( Settings ).



**" Display settings "**

40%-60%



20%-40%



5%-20%



<5%



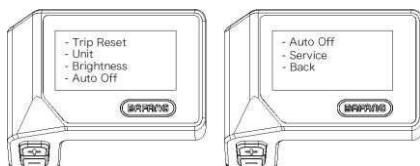
Flashing

**SETTINGS**

Press (<0.5S) to highlight Display Setting and then (<0.5S) to access the following options.



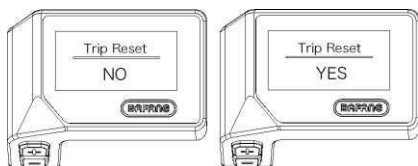
press briefly



### "TRIP Reset" Mileage reset

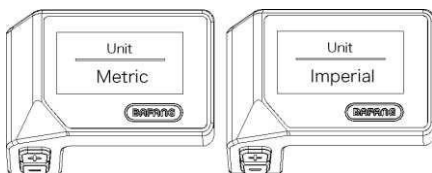
Press  or  buttons (<0.5S) highlight "Trip Reset"  in the display settings menu, and then  button (<0.5S) for selection. Then  choose between

"YES" (YES) or "NO" (NO). Once you have selected the desired option, press the button (<0.5S) to save and go to the "Display setting" menu.



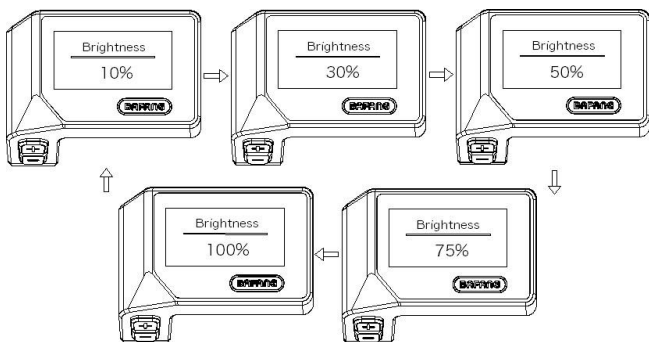
## Selecting "units" in km/mile

Press the button  or  (<0.5S) highlight "Unit" in the display settings menu and then press (<0,5S) vyberte.  Poté pomocí tlačítka nebo vyberte  mezi  "Metric" (kilometres) or "Imperial" (miles). Once you have selected the desired option, press the  (<0,5S) to save and exit to the "Display setting" menu.



## "Brightness" Display brightness

Press the  button or button  (<0,5S) highlight "Brightness" in the settings menu display than press  button. (<0,5S) pro výběr. Then use the button  or  Between "100%" / "75%" / "50%" / "30%" / "10%". Once you have selected the desired option, press the  (<0,5S) to save and go to "Display settings".



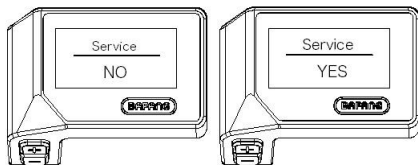
## "Automatic shutdown" Setting the time of automatic shutdown of the systém

Press the button or (<0,5S) highlight "Auto Off" in the menu settings display and then press button (<0,5S) choose. Then use the button or choose between "OFF", "9"/"8"/"7"/"6"/"5"/"4"/"3"/"2"/"1", (Numbers are measured in minutes). Once you have selected the desired option, press the (<0,5S) to save and go to "Display settings".



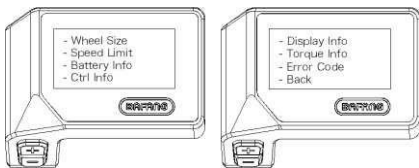
## "Service" Turning notifications on and off

Press the button or (<0,5S) highlight "Service" in the display settings menu And the press button (<0,5S) choose. Than with help of button select between the options "NO" (NE) nebo "YES" (ANO). Once you select the desired option, press the button (<0,5S) to select it save and go to the "Display



## " Information "

When the display is switched on, press and hold   (simultaneously) to enter the offer settings, press the button  or  (<0.5S) select "Information", then press button (<0.5S)  confirm and enter "Information".



confirm and display the wheel size. To return, press the button

#### 7.8.2.1 Wheel size

Press the button  or  (<0.5S) highlight "Wheel Size" and then press (<0.5S)  confirm and display the wheel size. To return, press the button  (<0.5S), to return to the "Information" screen.

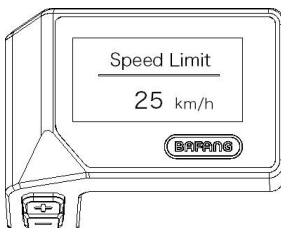
This information cannot be changed, it is for information only, about pedelec.



#### 7.8.2.2 Speed limits

Press the button  or  (<0.5S) highlight "Speed Limit" and then by pressing the button  (<0.5S) confirm and display the speed limit. To return, press the button  (<0.5S), to go back to "Information".

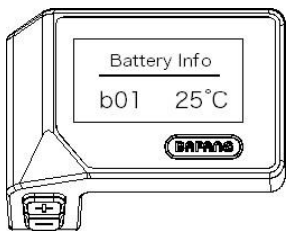
This information cannot be changed, it is for information only, about pedelec.



#### 7.8.2.3 Battery information

Press the button  or  (<0.5S) to highlight "Battery Info" and then press (<0.5S).  Now press the button  or  (<0.5S) to view the content. To go back, press the  (<0.5S) and go back to "Information".

setting".



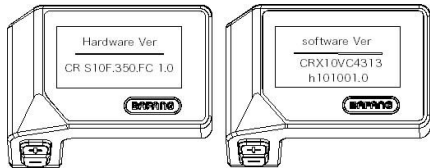
| Code             | Code definition      | units | Code | Code definition              | units    |
|------------------|----------------------|-------|------|------------------------------|----------|
| Hardware version | Hardware versions    |       | b10  | Absolute SOC                 | %        |
| Software ver     | Hardware versions    |       | b11  | Cyklus                       | times    |
| b01              | Current temperature  | °C    | b12  | Maximum non-charging time    | The Hour |
| b04              | Total voltage        | mV    | b13  | No time for charging lately. | The Hour |
| b06              | Average current      | mA    | d00  | Number of battery cells      |          |
| b07              | Remaining capacity   | mAh   | d01  | Voltage of cell 1            | mV       |
| b08              | Full charge capacity | mAh   | d02  | Cell Voltage 2               | mV       |
| b09              | Relative SOC         | %     | dn   | Cell Voltage                 | mV       |

NOTE: If no data is found, "--" is displayed

## Driver information

Press the button  or  (<0,5S) highlight "Ctrl Info" and then press the  (<0,5S) make the settings. Now press the button  or  (<0,5S) to view the Hardware Version or Software Version.

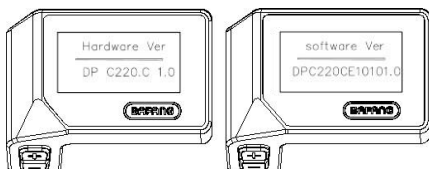
To go back, press the  (<0,5S) and go back to "Information".



## Information display

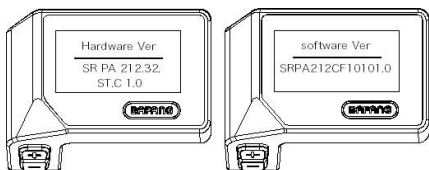
Press the button  or  (<0.5S) highlight "Display Info" and then press  (<0.5S) confirm. Now press the button  or  (<0.5S) to display the hardware version or software version.

To go back, press the  (<0.5S) and go back to "Information".



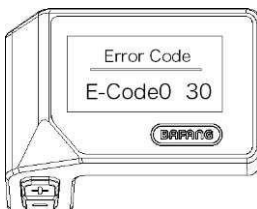
## Torque information

Press the button  nebo  (<0.5S) zvýrazněte položku "Torque Info" a poté stisknutím tlačítka  (<0.5S) potvrďte. Nyní stiskněte tlačítko  nebo  (<0.5S) to display the hardware version or software version. To go back, press the  (<0.5S) and go back to "Information".



## Error code

Press the button  or  (<0.5S) highlight "Error code" and then press buttons (<0.5S)confirm  . Now press the button  or  (<0.5S) to display a list of error codes from the pedelec. Can display information about the last ten pedelec errors. The error code "00" means that no error occurred. To go back, press the  (<0.5S) and go back to "Information".



# ERROR CODE DEFINITION



The HMI can display faults on the Pedelec. When a fault is detected, the also displays one of the following error codes.

Note: Read the description of the error code carefully. When the error code appears, reboot the system first. If the problem cannot be corrected, contact your dealer or technical staff.

| Error                                                                                                                                                                                                                                       | Statement                                                                   | Troubleshooting                                                                                                          |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------|
| 1. Check that the throttle cable and connector DE are not damaged and not connected correctly.<br>04 The throttle valve is defective.<br>2. Disconnect and reconnect the throttle valve if still does not work, replace the throttle valve. |                                                                             |                                                                                                                          |
| 05                                                                                                                                                                                                                                          | The throttle valve is not in the correct position.                          | Check that the throttle connector is correctly connected. If this does not solve the problem, replace the throttle body. |
| 1.Remove and reinsert the battery and check if the problem is resolved.<br>07 Surge protection<br>Use the BESST tool to update the controller.<br>You can solve the problem by replacing the battery.                                       |                                                                             |                                                                                                                          |
| 08                                                                                                                                                                                                                                          | Hall sensor signal error inside the engine                                  | Check that all motor connectors are properly connected.<br>If the problem persists, replace the motor.                   |
| 09                                                                                                                                                                                                                                          | Motor phase error                                                           | Replace the motor.                                                                                                       |
| 10                                                                                                                                                                                                                                          | The temperature inside the device has reached the maximum protective value. | Switch off the system and let the Pedelec cool down.<br>If the problem persists, replace the motor.                      |
| Temperature sensor inside the engine<br>Replace the motor.                                                                                                                                                                                  |                                                                             |                                                                                                                          |
| 11 has a flaw                                                                                                                                                                                                                               |                                                                             |                                                                                                                          |
| 12                                                                                                                                                                                                                                          | Current sensor error in the controller                                      | Replace the control unit or contact your supplier.                                                                       |

| Error    | Statement                                                                                  | Troubleshooting                                                                                                                  |
|----------|--------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------|
| batterie | 1. Check that all connectors are disconnected from the battery                             |                                                                                                                                  |
|          | Error temperature sensor inside are properly connected to the motor.13                     |                                                                                                                                  |
|          | 2. If the problem persists, replace the battery.                                           |                                                                                                                                  |
| 14       | The protection temperature inside the controller has reached the maximum protection value. | Let the pedecec cool down and restart the system.<br>If the problem persists, replace the control unit or contact your supplier. |

1. Let the pedecec cool down and restart  
Temperature sensor error inside the système controller

15

2. If the problem persists, replace the con- troller or contact your supplier.

|    |                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|----|--------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 21 | Speed sensor error | Rebooting the system<br>Check that the magnet attached to the beam is aligned with the speed sensor and that the distance between them is 10 mm and 20 mm.<br>Check that the speed sensor connector is properly connected.<br>Connect the pedecec to the BESST to see if there is a signal from the speed sensor.<br>Use the BESST Tool to update the controller and see if the problem is resolved.<br>Replace the speed sensor and see if this fixes the problem. If the problem persists, replace the controller or contact your supplier. |
|    |                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |

Check that all connections are correct connect.

Connect the pedecec to the BESST system and see if the BESST tool can read the torque.

25 Torque signal Error

3. Use the BESST Tool to update the controller and see if the problem is resolved, if not, replace the torque sensor or contact your supplier.

| Error | Statement                               | Troubleshooting                                                                                                                                                                                                                                                                                                                                                          |
|-------|-----------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 26    | Torque sensor speed signal has an error | <p>Check that all connections are properly connected.</p> <p>Connect the pedelec to the BESST system to see if the BESST can read the speed signal.</p> <p>Change the display and see if the problem is resolved.</p> <p>Use the BESST Tool to update the controller and see if the problem is resolved, if not, replace the torque sensor or contact your supplier.</p> |
| 27    | Overcurrent from the controller         | <p>Use the BESST tool to update the controller. If the problem persists, replace the controller or contact your supplier.</p>                                                                                                                                                                                                                                            |

Check that all connections to the pedelec are connected correctly.

Use the BESST Tool to run a diagnostic test and see if it can identify the problem.  
 Replace the display and see if the problem is resolved.

### 30 Communication problem

Replace the EB-BUS cable and see if the problem is solved.  
 Use the BESST tool to update the controller software again. If the problem persists, replace the controller or contact your supplier.

|    |                                                              |                                                                                                                                                                                                                            |
|----|--------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 33 | The brake signal has an error (if brake sensors are fitted). | <p>Check that all the connectors on the brakes are connected correctly.</p> <p>Replace the brakes and see if the problem is solved.</p> <p>If the problem persists, replace the control unit or contact your supplier.</p> |
|----|--------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

Detection circuit for 15V has Use the BESST tool to update the controller

35 and see if this solves the problem. If not, replace the control unit or contact your supplier.

|    |                                          |                                                                                                                                        |
|----|------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------|
| 36 | The keyboard detection circuit is faulty | <p>Use BESST to update the controller and see if this resolves the issue. If not, replace the controller or contact your supplier.</p> |
|----|------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------|



| Error | Statement                                                                   | Troubleshooting                                                                                                                 |
|-------|-----------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------|
| 37    | The WDT circuit is defective                                                | Use BESST to update the controller and see if this resolves the issue. If not, replace the controller or contact your supplier. |
| 41    | Total battery voltage is too high                                           | Replace the battery.                                                                                                            |
| 42    | Total battery voltage is too low                                            | Charge the battery. If the problem persists, replace the battery.                                                               |
| 43    | Total cell power of the battery is too high                                 | Replace the battery.                                                                                                            |
| 44    | Voltage of one cell is too high                                             | Replace the battery.                                                                                                            |
| 45    | Battery temperature too high                                                | Let the pedelec cool.<br>If the problem persists, replace the battery.                                                          |
| 46    | Battery temperature is too low                                              | Bring the battery to room temperature. If the problem persists, replace the battery.                                            |
| 47    | Battery SOC is too high                                                     | Replace the battery.                                                                                                            |
| 48    | Battery SOC is too low                                                      | Replace the battery.                                                                                                            |
| 61    | Switching fault detection                                                   | Check that the gear lever is not stuck.<br>Please replace the gear lever.                                                       |
| 62    | Electronic shifters cannot be<br>Please replace the derailleur.<br>Release. |                                                                                                                                 |
| 71    | The electronic lock is jammed                                               | Use BESST to update the display and see if the problem is resolved.<br>If the problem persists, replace the electronic lock.    |

Use BESST to update the software again

81 The Bluetooth module has an error on the display and see if the problem is resolved.  
If not, replace the display.

01 Communication error Check cable connection

02 Control unit protection Check the three-phase power supply line.

03 Three-phase power supply error Check the three-phase power line connection.

04 Low battery Charge battery

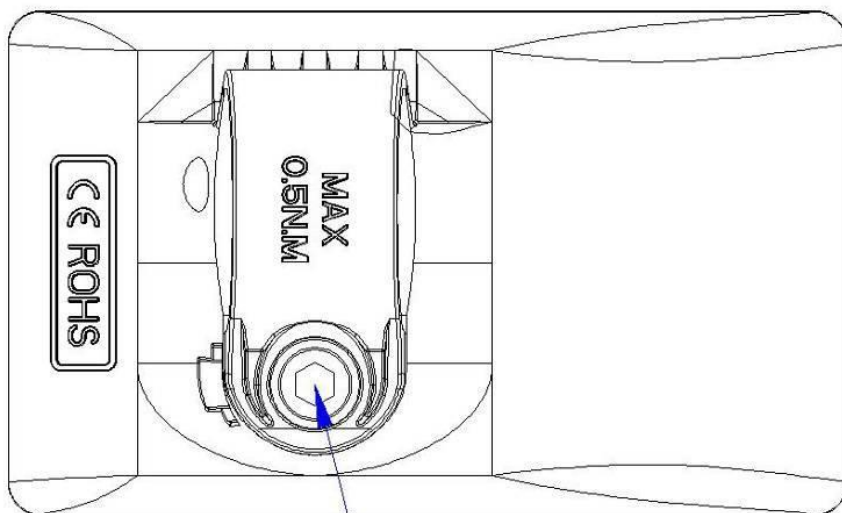
05 Brake fault Check the brake connection. Check the rotation for connection.

08-99 Reserved Please contact the manufacturer for error definitions.

## Installation instructions

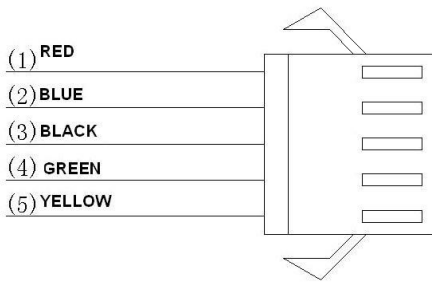
Pay attention to the bolt tightening torque value, damage caused by excessive tightening torque.

Output wire instructions



M4\*12

MAX=0.50 N.M



- 1、 Red wire: Anode(24v/36v)
- 2、 Blue wire: Power cord to the controller
- 3、 Black wire: GND
- 4、 Green wire: RxD (controller -> display)
- 5、 Yellow wire: TxD (display -> controller)

The PAS level can be customised, the highest level is 9, see the table below for the commonly used PAS level:

# Maintenance

## Regular maintenance:

- keep all components of the e-bike clean
- use only recommended and tested cleaning materials
- regularly lubricate the chain with suitable oils
- in winter, clean the e-bike and especially the battery contacts and other connectors of salt after each ride
- take care not to damage the cables of the electrical system when handling the e-bike in any way. Damaged cables pose a risk of electric shock
- regularly check that all connections are tightened correctly and that the brakes are working. Also check individual parts of the electric bike for damage. For example: cracks on the frame, fork, handlebars, stem, damaged cables, damaged battery cover, etc.
- Always remove the battery before transporting the e-bike on or in the car

## Transportation of the battery:

The requirements of the Dangerous Goods Regulations apply to the transport of batteries. Private users may transport undamaged batteries on the road without complying with other conditions.

When transported by commercial users or by third parties, special packaging and labelling requirements (e.g. ADR regulations) must be observed

Only ship batteries if they do not have a damaged cover. Seal loose contacts and pack the battery so that it does not move in the packaging. Notify the delivery service that this is dangerous goods.

## Battery storage:

Store the battery in a dry and ventilated place out of direct sunlight and other heat sources. In case of cold storage, the battery must first be allowed to warm up to normal room temperature (20 °C) before being put into operation.

Never leave the battery fully discharged. It could be permanently damaged. Keep the battery fully charged during long-term storage. However, do not store it permanently connected to the charger or placed in the electric bike. Li-ion batteries are fully recyclable. At the end of the battery's life, you can dispose of it at any collection point or at your dealer.

If the bike is used under heavy loads (prolonged use of maximum assistance), for extended periods of riding in hot temperatures (30 °C or more), in direct sunlight, or with a partially discharged battery, and a combination of these situations, the e-bike may shut down. This is a fuse to protect the control unit from burning. The bike should be allowed to cool down for a while and then you can continue riding. This is not a defect.

# Possible problems and solutions

In the event of a malfunction, have the system diagnosed or contact your dealer.

The LCD control display does not light up:

- Always make sure the battery is charged
- Check that the battery is inserted correctly, that the battery switch is on
- Check the connectors on the control unit and the display

The motor does not start when the walk assist button is pressed

- Check the motor cable connections (at the motor and at the control unit)
- Check the connectors on the control unit and the display

## Meaning of error codes

In case the e-bike is malfunctioning, the instrument may emit warning messages, an icon will appear on the LCD display and an error code will appear on the speed display; the error codes are indicated from 01 E~07 E, their meanings are shown in the following table.

| Error code | Error description          | Solution                                                      |
|------------|----------------------------|---------------------------------------------------------------|
| 04         | The gas is not coming back | Check that the throttle has returned to its original position |
| 05         | Gas error                  | Check the gas                                                 |
| 06         | Low Voltage Protection     | Check battery voltage                                         |
| 07         | High Voltage Protection    | Check battery voltage                                         |
| 08         | Motor cable error          | Check the drive unit                                          |
| 09         | Motor cable phase error    | Check the drive unit                                          |
| 11         | Temperature sensor failure | Check the driver                                              |
| 12         | Current sensor fault       | Check the driver                                              |
| 13         | Battery temperature error  | Check the battery                                             |
| 21         | Speed sensor error         | Check the position of the speed sensor                        |
| 22         | BMS communication error    | Replace the battery                                           |
| 23         | Motor cable phase error    | Check the drive unit                                          |
| 30         | Communication error        | Check the driver connection                                   |

## Mounting and dismounting the bike with motor

You may need to remove the wheel with the motor engaged for transport or servicing (tube replacement). First, disconnect the motor connector by pulling slightly (approx. 20 cm from the motor inlet). Then loosen the brake shoe (if used) and reposition it on the smallest wheel.

Remove the rubber caps from the wheel nuts.

Loosen the motor nut with a #18 wrench and remove the wheel from the frame.

Follow the reverse order for assembly.

The arrows on the connector must point opposite each other for proper connector connection.

Switch on the drive unit and test the functionality of the drive unit.

## Warranty electrosets

Complaint procedure:

Always file a claim with your dealer.

When making a claim, please present the proof of purchase, the warranty card with the serial number of the battery and the reason for the claim and a description of the defect.

Warranty conditions:

24 months for the components of the electric bike - covers manufacturing and material defects beyond normal wear and tear caused by use.

12 months for battery life - the rated capacity of the battery will not fall below 70% of its total capacity within 12 months of the sale of the e-bike.

Warranty Terms:

The battery must be used solely for the purpose for which it is intended.

The electric battery must be used, stored, and maintained in accordance with this user manual.

The warranty is void:

If the product is found to have been damaged by the user (accident, improper handling beyond the scope of this user manual, improper tampering with the design of the electric bike or the wiring of the electrical system, improper storage, etc.) The warranty period expires.

The warranty applies only to the first owner

## Notice

If you do not understand any point in these instructions, please contact your dealer for clarification. Read the whole manual!

Do not lend an electric bicycle to persons who have not been instructed in its use. Claims arising from improper handling will not be accepted.

The LF energy electric bicycle is in no way intended for children under 15 years of age. The e-bike may also not be used by persons who are unable to pedal or handle it independently. The manufacturer is not responsible for any injury or damage to the e-bike! The ideal weather conditions for operating an e-bike are dry days when the outside temperature is above 10°C. In the case of operation at lower temperatures, physical phenomena cause the battery to discharge more quickly. It is not recommended to operate the e-bike in outdoor temperatures below 0 °C.

Do not expose the bike to direct sunlight, the bike has a thermal protection sensor for the electric drive.

Never immerse the battery, charger or other electrical components in water or other liquids.

Never pressure wash (WAP) an e-bike and always remove the battery before washing.

It is forbidden to interfere with the wiring of the electric motor, control unit or battery. Violation of this point may result in the goods not being covered under warranty or irreparable damage to the electric bike.

DO NOT use any chargers or components other than those supplied with the e-bike.

We are not liable for damages caused by the use of other, non-homologated, products.

# **LEADER FOX**



## **Your team Leader Fox**



We wish you many pleasant and safe miles on your new electric bike.

**Czech brand of electric bicycles  
BOHEMIA BIKE**

**Headquarters**  
Na Pankráci 1724  
14000 Praha 4 – Pankrác

**Development, design and production**  
Okružní 697  
České Budějovice 37001

Tel: 388 314 885  
E-mail: [info@leaderfox.cz](mailto:info@leaderfox.cz)