

ZIPFORCE

Zipforce Slim User Manual



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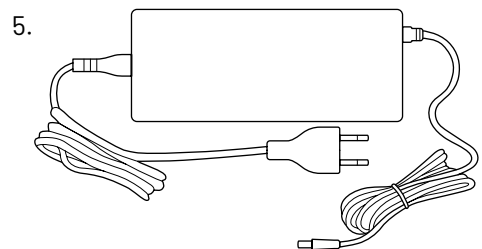
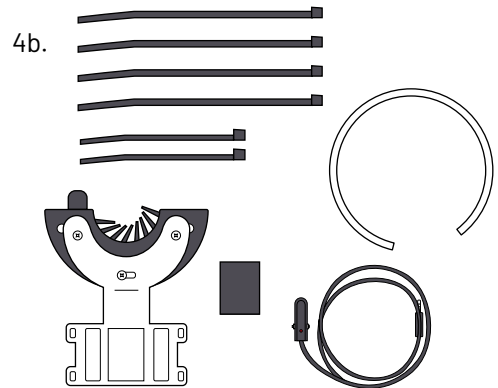
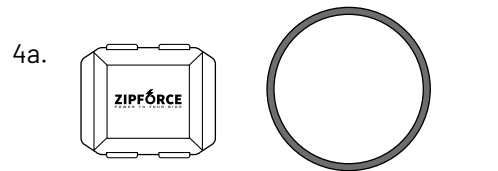
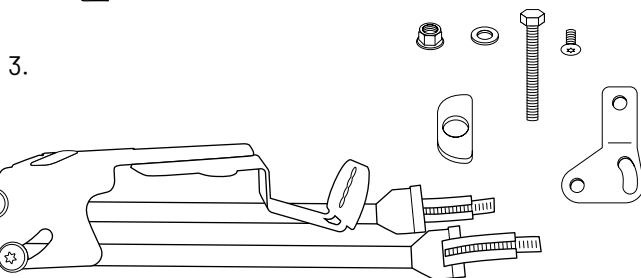
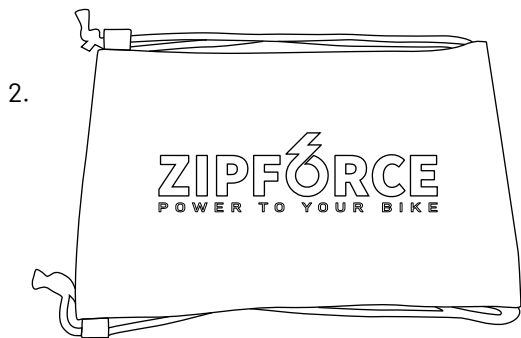
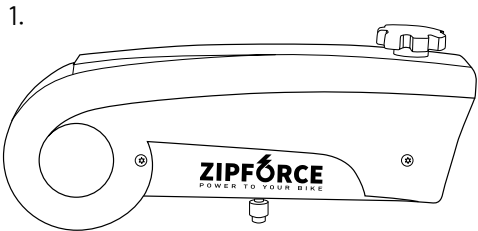
BEFORE FITTING

1. Charge the Zipforce using the charger provided.
2. Clean the bicycle.
3. Gather the tools required for fitting (see image 3).
4. Make sure that the tyres are sufficiently inflated and that you have enough space to work on the bike.

2

YOUR PACKAGE CONTAINS

1. Zipforce
2. Bag
3. Motor bracket with fitting kit
4. One of the following alternatives:
 - a. Wireless PAS sensor with strap (standard)
 - b. PAS sensor set (pedal sensor ring, metal ring and sensor cable)
5. Charger



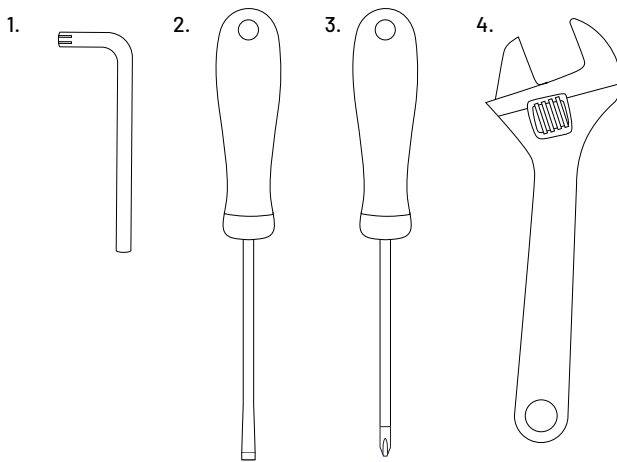
3

TOOLS YOU NEED

Choose between option A or B.

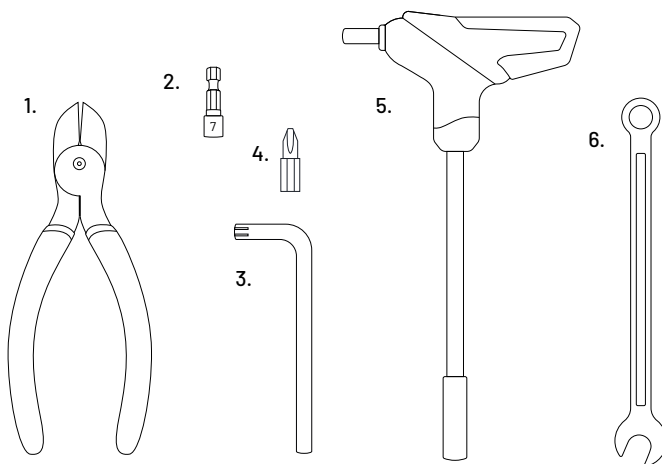
A. NECESSARY

- 1. Torx Allen key (included)
- 2. Slotted screwdriver
- 3. Phillips screwdriver
- 4. Wrench



B. ALTERNATIVES FOR FASTER FITTING

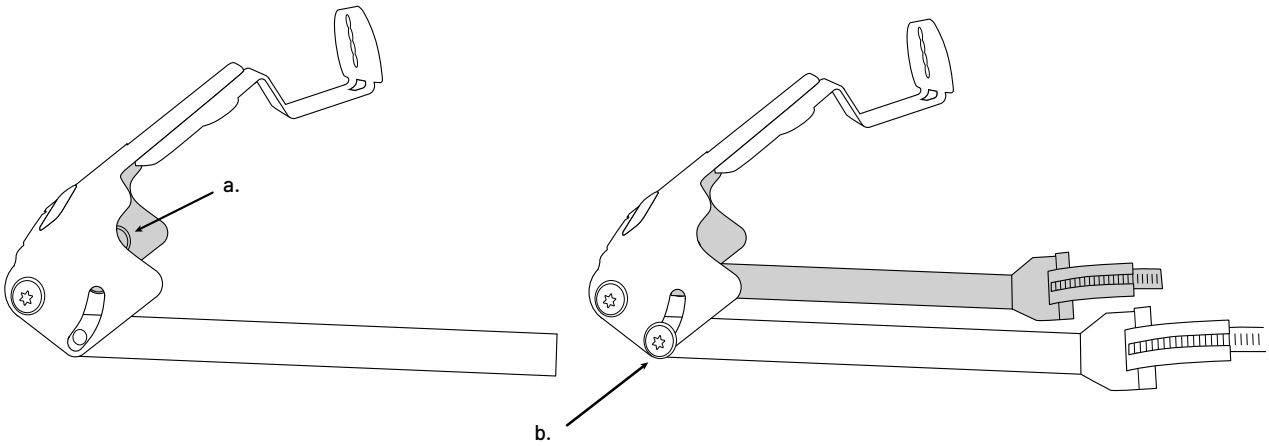
- 1. Cutting pliers
- 2. 7 mm socket
- 3. Torx Allen key (included)
- 4. Star bits
- 5. Bit holder
- 6. 10 mm spanner or wrench



4

RELOCATE THE BRACKET SCREWS

Remove the bracket screws located on the inside (a) and screw them through from the outside (b).

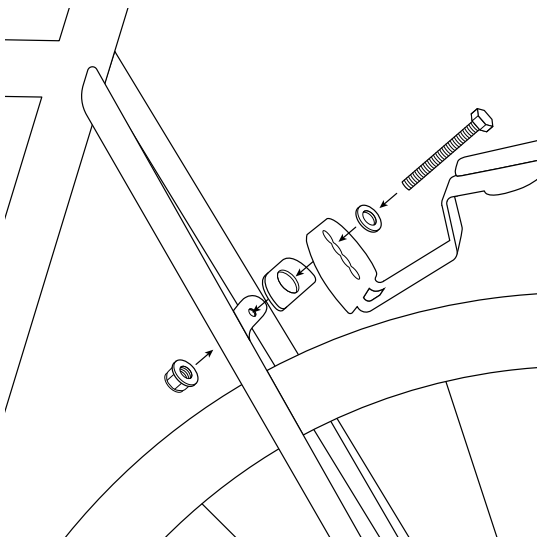
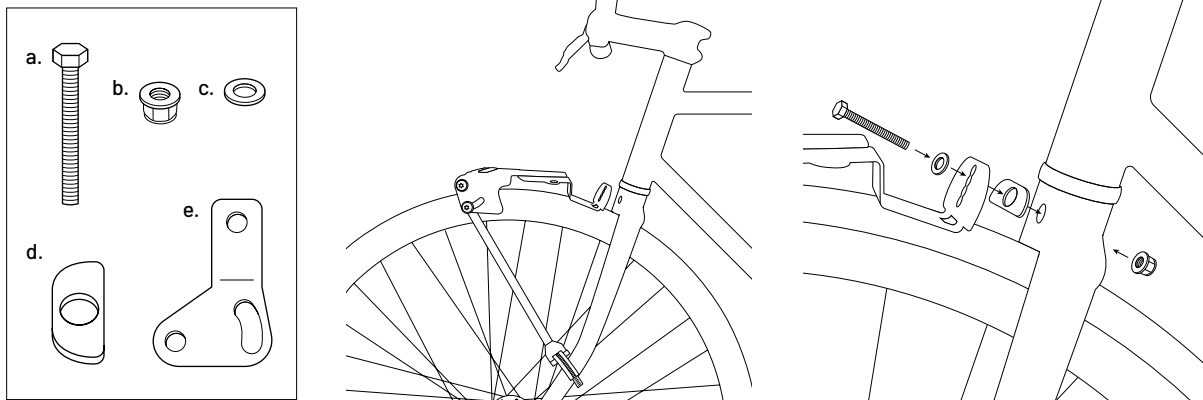


FITTING THROUGH THE FRONT FORK CENTRE HOLE

The centre screw (a) is fixed into the centre hole on the front fork using an M6 nut (b) and washer (c). If the surface of the front fork centre hole is uneven, you can use the spacer (d) between the front fork and the bracket.

Where required, you can use the special bracket included to move any bicycle lights (e) out of the way. See the image in step 16. The variety of front fork and brake designs on the market may require the Zipforce to be fitted a little differently.

If your bike does not look like the one in the image, or if you have a bike basket in the way, you can find alternative fitting options at zipforce.io.



The Zipforce can be fitted to the bike's rear wheel if this works better for your bike. You just need to carry out the same steps described above but instead use the seatstays centre hole (see image).

Most people fit to the front wheel because panniers and mudguards are often in the way of a rear wheel fitting. You may need to remove or adapt the rear wheel guard.

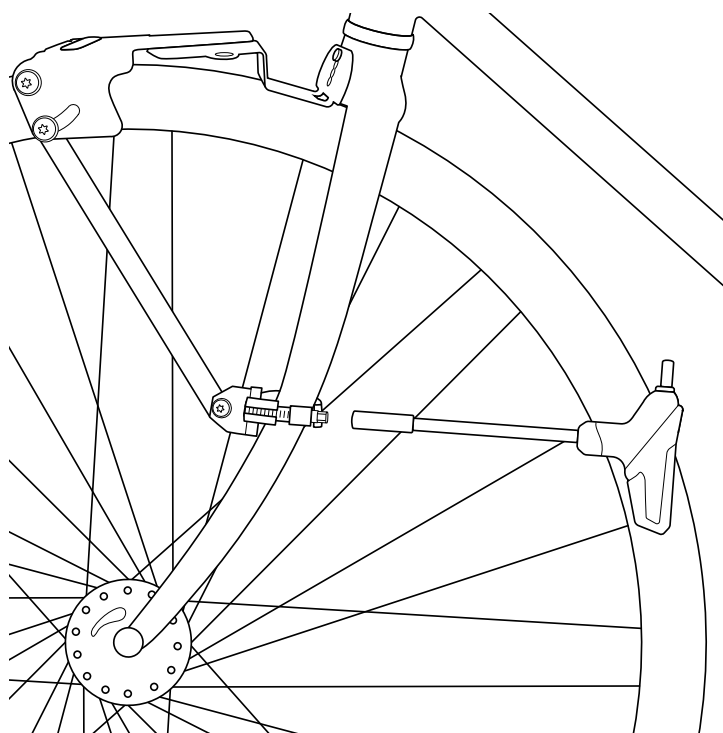
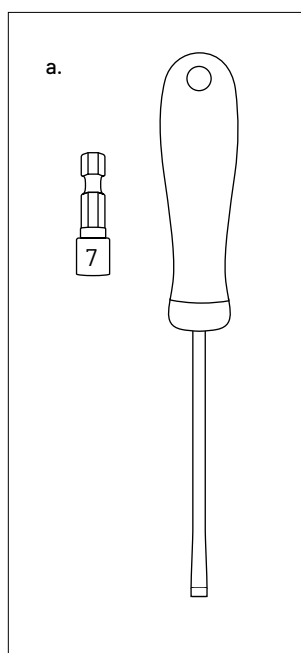
Remember to switch to "Reverse Mode" in the app before cycling.

6

FITTING THE HOSE CLAMPS

The hose clamps are attached around the front fork and tightened using a 7 mm socket or a slotted screwdriver (a). It is important to ensure that both hose clamps are fitted at the same height. Do not tighten these fully until later. Any rubber that protrudes beyond the hose clamp can be cut off.

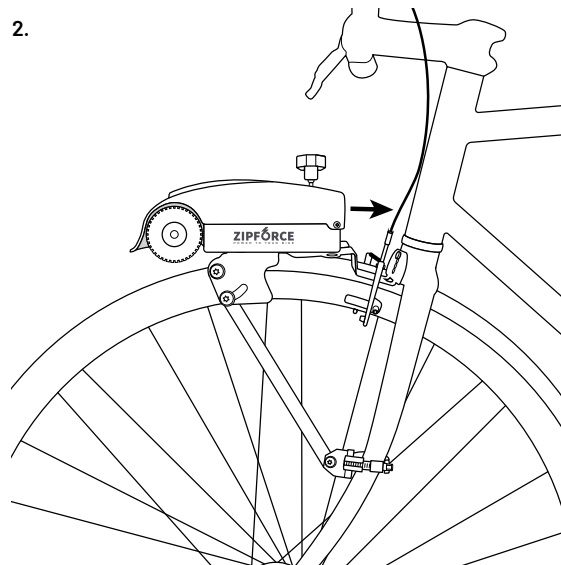
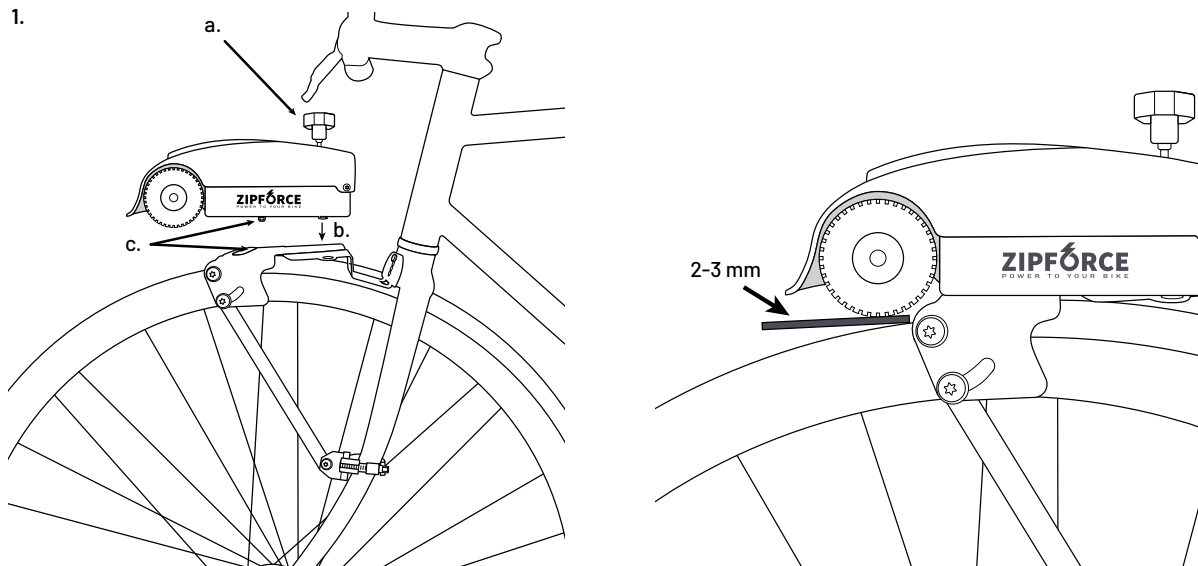
When fitting to the rear wheel you do the same procedure, but attach the clamps to the seat stays instead.



CLIP IN THE ZIPFORCE

Start by checking that the motor bracket is located leveled over the tyre.

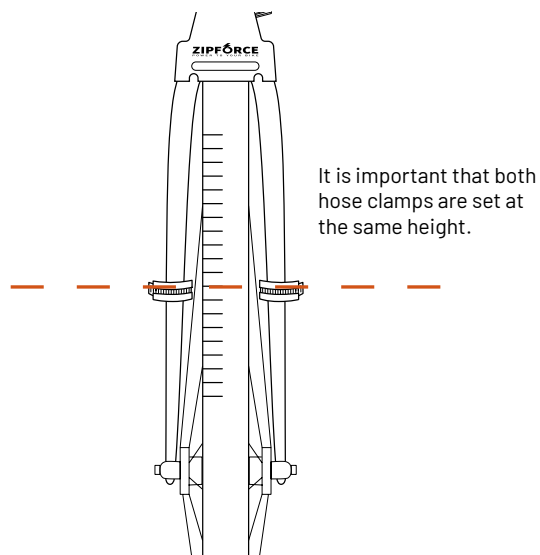
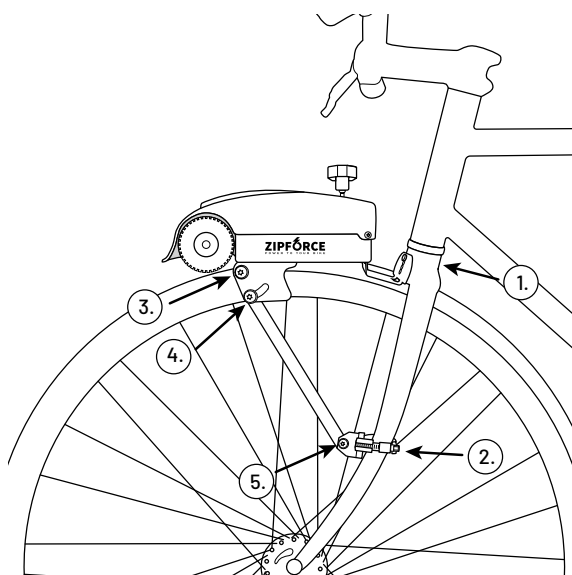
1. Clip in the Zipforce without screwing down the clamping screw (a). Use the pedal sensor ring to check that the drive wheel is 2-3 mm above the tyre. Place the Zipforce into the motor bracket so that the clamping screw aligns with the hole (b). Ensure that the lugs (c) are in line with the slots on the motor bracket.
2. Push the Zipforce towards the handlebars with some force. A clear "clicking sound" can be heard when pushed in fully. When the Zipforce is clicked into place, the holes on the side lever of the motor bracket should be aligned. This is the lever you pull back to remove the Zipforce.



TIGHTEN BRACKET SCREWS AND HOSE CLAMPS

1. Tighten the centre hole nut.
2. Tighten the hose clamps and make sure that both clamps are set at the same height. This is important.
3. Tighten the upper bracket screws.
4. Tighten the lower bracket screws.
5. Tighten the screws next to the hose clamps.

Check that the distance between the drive wheel and the tyre is still 2-3 mm, the clamping screw should not yet be tightened. If the mudguard is touching the tyre, adjust as shown in image 6.



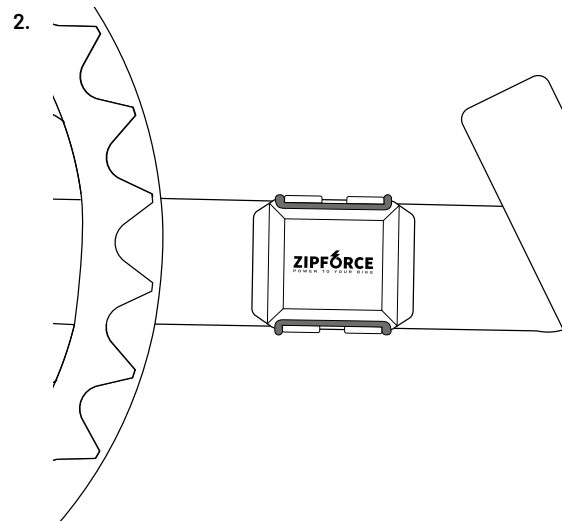
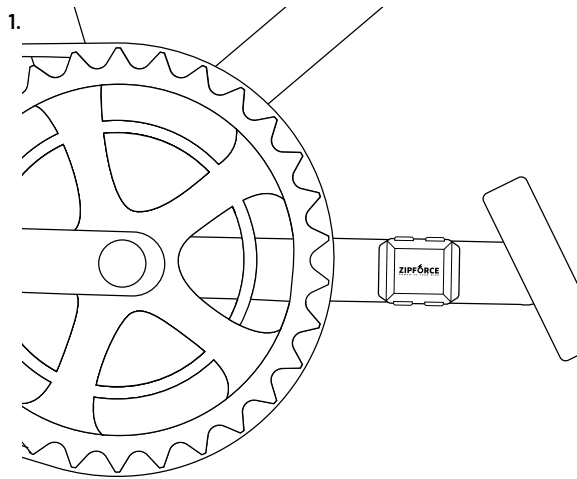
FITTING THE WIRELESS PEDAL SENSOR

The PAS sensor can be fitted in various places on your bike, but for some fittings you need to change the settings to "PAS reverse" in the app.

Fitting the PAS sensor can be carried out on:

- Inside of left crank arm.
- Outside of left crank arm (switch to PAS reverse).
- Inside of right crank arm (switch to PAS reverse).
- Outside of right crank arm.

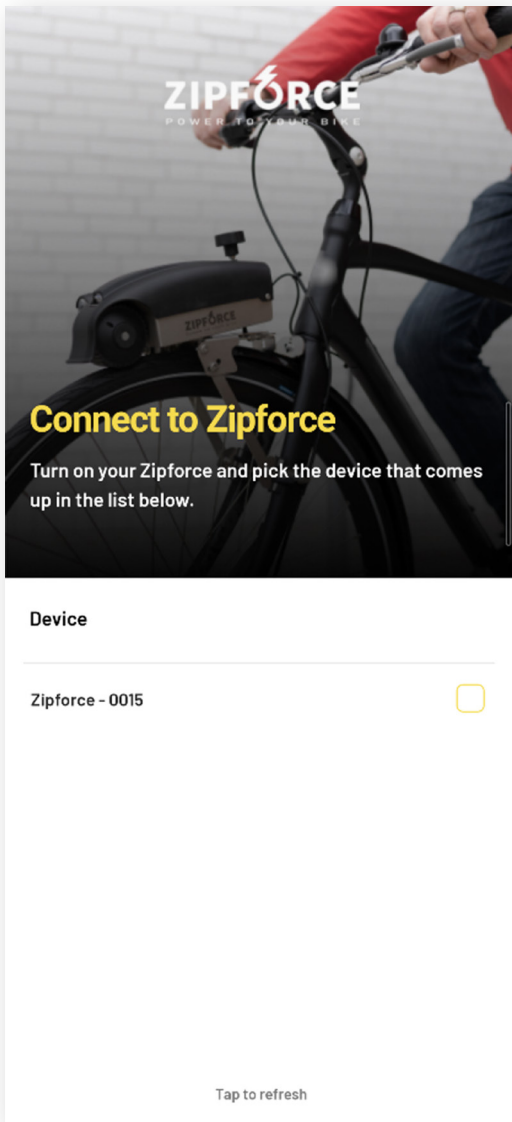
1. Place the PAS sensor on the crank arm.
2. Fasten with the supplied strap.



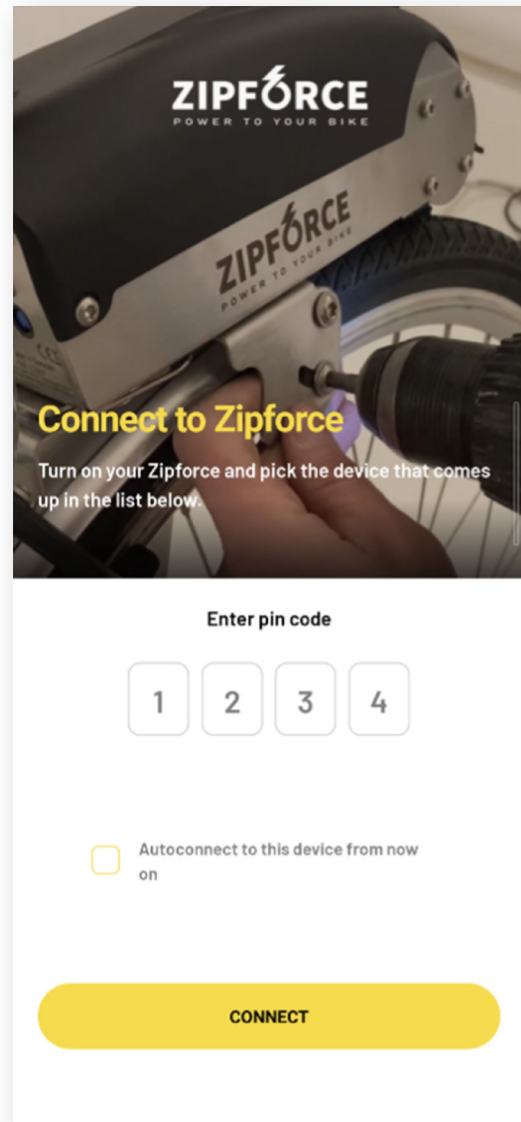
CONNECT THE ZIPFORCE WITH THE APP

1. Download the Zipforce app.
2. Start the app and choose the correct Zipforce device among the eligible devices.
3. Enter PIN code 1234.

2.



3.

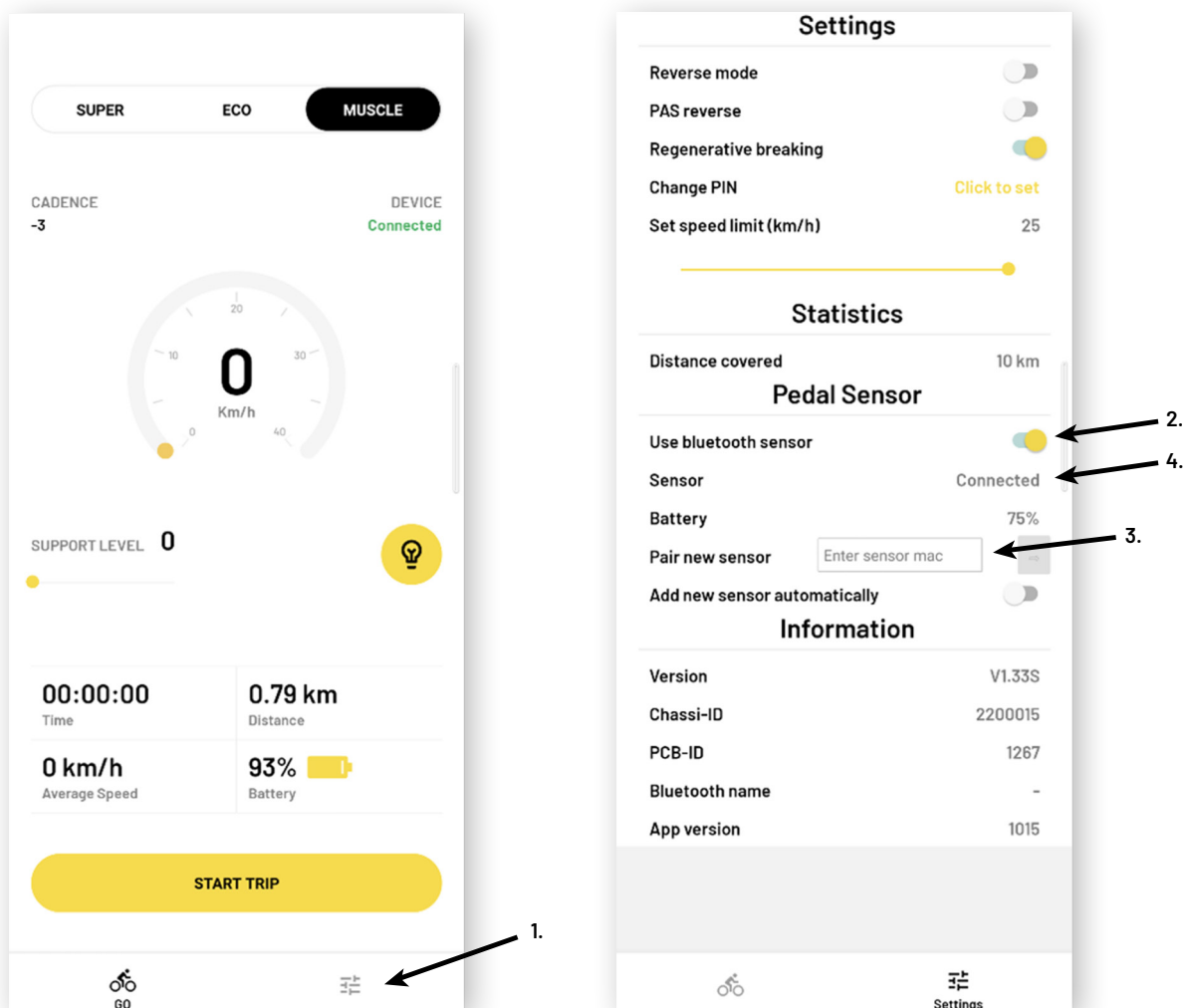


TROUBLESHOOTING/RECONNECT WIRELESS PAS TO THE ZIPFORCE

1. Go to settings by using the symbol in the bottom right corner.
2. First, activate wireless PAS with "Use Bluetooth sensor". This is necessary to be able to connect a sensor. A Zipforce has room for five wireless sensors. If you move the Zipforce between bikes/sensors, the different MAC addresses for the wireless PAS sensors need to be stored on the device.
3. To add (pair) a new wireless PAS:

Scan the QR code on the back of the sensor. Then paste the code under "Pair new sensor". You can also enter the 12 character long MAC address manually. Click on the yellow button that appears when you have entered the MAC address.

If you accidentally add the same address several times, it is ok.
4. When the wireless PAS sensor is connected, it will be visible here. You do not have to use "Add new sensor automatically".

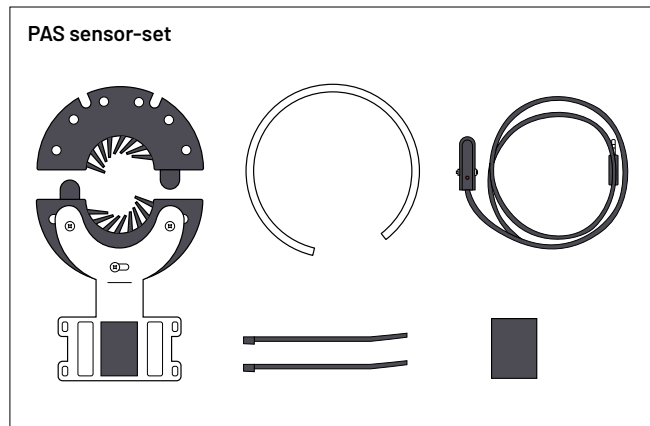


FITTING THE PAS SENSOR SET

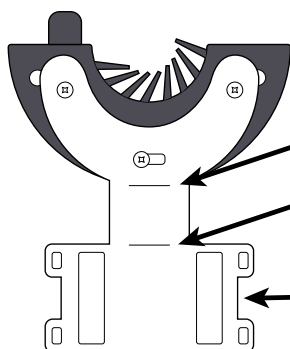
➔ If you are not installing a PAS sensor with cable, please go to step 15.

The pedal sensor captures when you are pedalling and decides when the Zipforce should assist. It is important to ensure that the pedal sensor ring does not wobble or sit crooked or loose! Adjust using the sheet metal bracket until the pedal sensor ring is completely straight. If the pedal sensor or pedal sensor ring is not straight, the sensor will not pick up the signals and the Zipforce will then operate poorly or not at all.

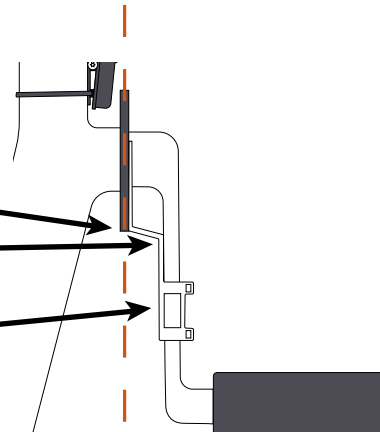
1. Bend the sheet metal bracket so that it fits along the pedal arm and so the sensor ring is straight, see images 1a and 1b.
 - a. bend the sheet metal bracket along line a.
 - b. bend the sheet metal bracket along line b. The pedal sensor should now sit completely straight. See image 1b.
2. Bring the two crescent-shaped parts of the pedal sensor ring together. See step 13 image 2a. It is important to ensure that the pedal sensor ring is straight and stable. If the pedal sensor ring does not fit around the axle, you can cut away every other small spike inside the crescent. See step 13 image 2b.
3. Fasten the metal ring around the pedal sensor ring by pushing it into place in the groove. See step 13 image 3.
4. Bend the bracket to fit along the pedal crank arm (c) and that the pedal sensor ring is completely straight.
5. Secure the sheet metal bracket with cable ties around the pedal crank arm. Tighten the cable ties and make sure that the ring is stable. See step 13 image 4.



1a.



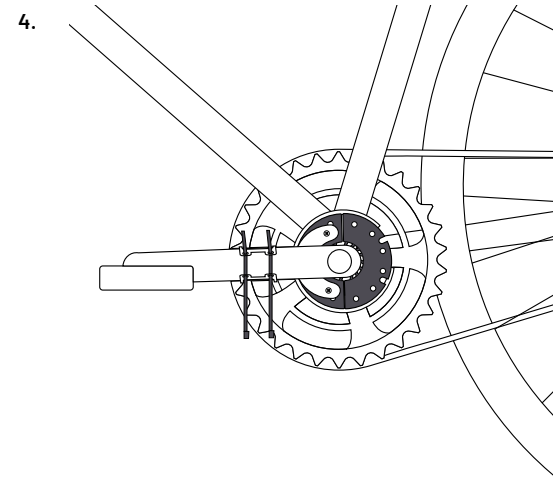
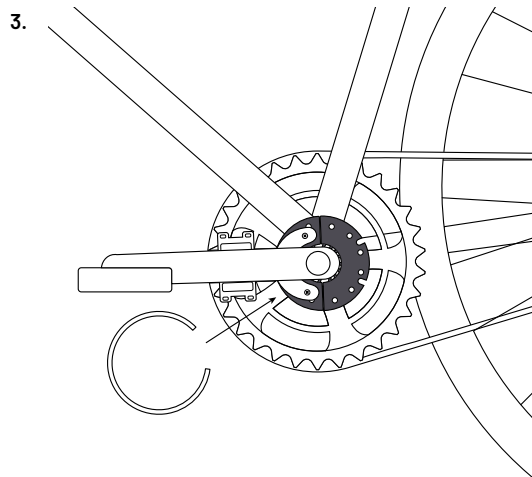
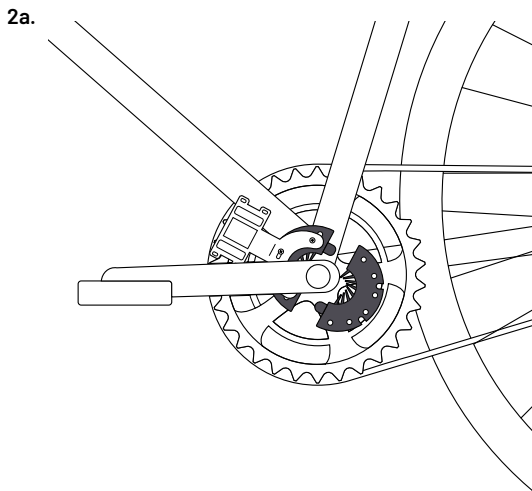
1b.



13

OPTIONAL

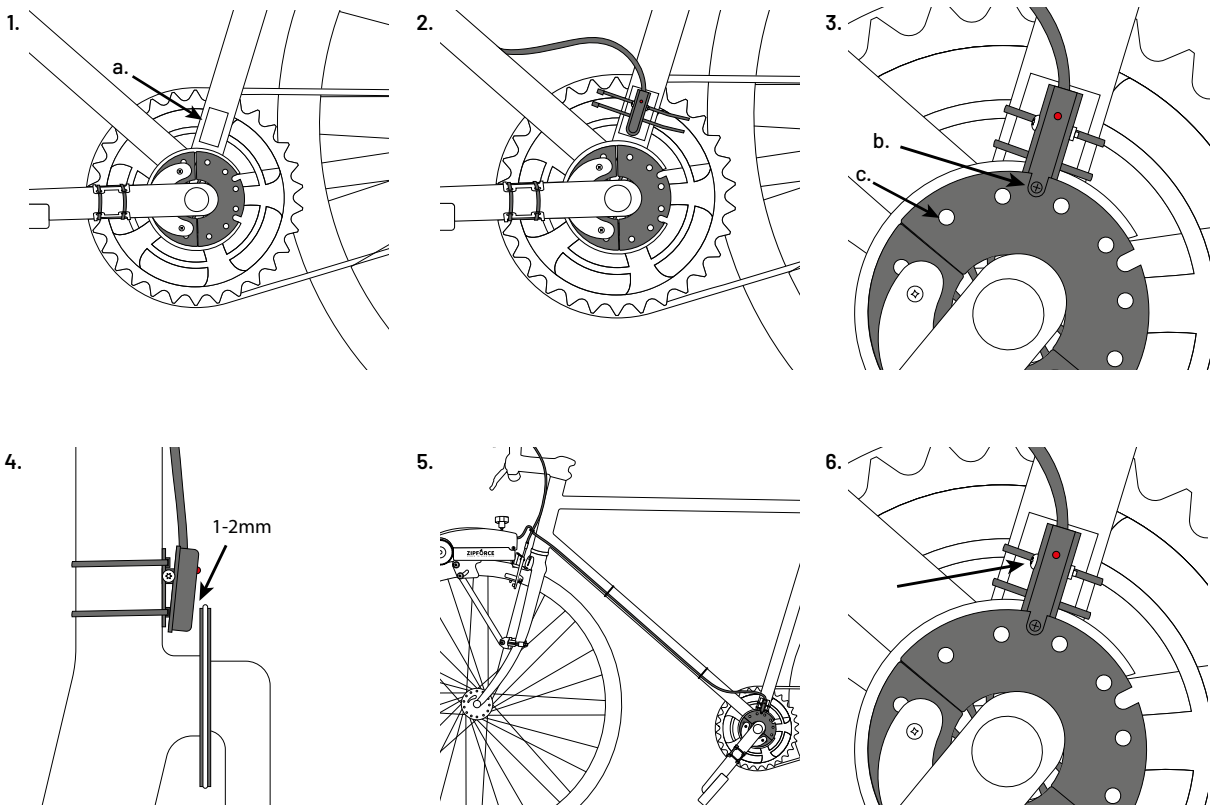
INSTALLATION OF PEDAL SENSOR RING



INSTALLATION OF SENSOR CABLE

1. Attach the supplied self-adhesive rubber to the frame (a).
2. Insert the smaller cable ties through the holes on the pedal sensor at the end of the sensor cable.
3. Attach the pedal sensor using the cable ties so that the cross (b) on the pedal sensor is level with the magnets, the small round blank rings (c).
4. Adjust the pedal sensor so that it sits 1-2 mm from the pedal sensor ring.
5. Insert the pedal sensor connector into the Zipforce and attach the sensor cable to the bicycle frame with the supplied larger cable ties. Make sure that there is enough slack on the sensor cable to the Zipforce connector for the handlebars to be turned.
6. Tighten the pedal sensor screw using a Phillips screwdriver.

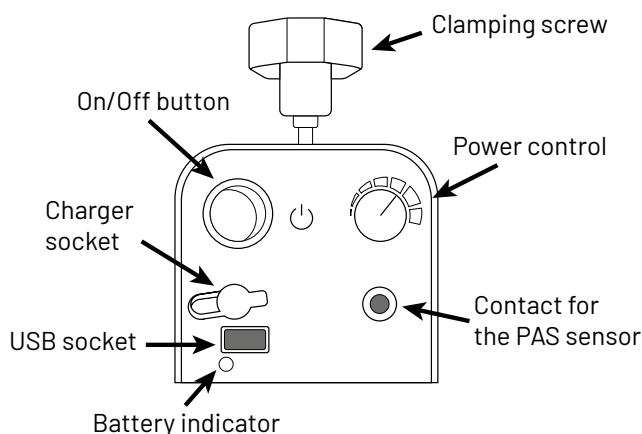
NOTE! It is very important that the pedal sensor is aligned. To test this, pedal forwards. The red LED on the pedal sensor should then flash at a steady pace.



CYCLING WITH THE ZIPFORCE

Clip in the Zipforce and screw down the clamping screw (clockwise) until you see that there is good pressure against the tyre. Make sure that the tyre is properly inflated, at around 3-4 bar (43-58 PSI).

- Insert the sensor cable.
- Start the Zipforce, wait for the two beeps to sound within a few seconds.
- Set how much assistance you would like using the power control. Feel free to start with the power control in the middle to get a feel for which power setting suits you.
- Now you can start cycling just as normal.
- To remove the Zipforce, unscrew the clamping screw and pull the lever on the motor bracket while pulling out the Zipforce.



THE ZIPFORCE APP

Download the app via Google Play or the Apple Store. With the app, you can, among other things, change the settings on your Zipforce and see information about your Zipforce and cycling. For more information and how to connect, see: zipforce.io.

The standard code to connect is 1234.

ACCESSORIES

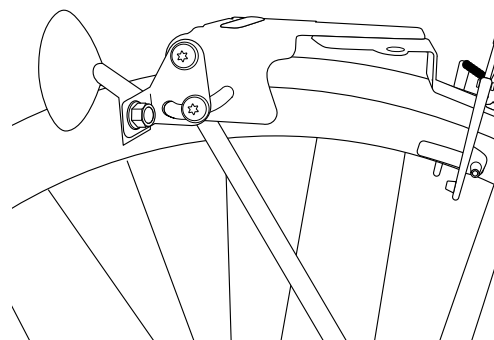
There are a variety of accessories such as mudguards, mobile phone holders, etc. For more information visit zipforce.io.

16

ZIPFORCE WITH BICYCLE LIGHT

If you have a bicycle light where the supports for the motor bracket are mounted, you can use the included fitting made especially for bicycle lights.

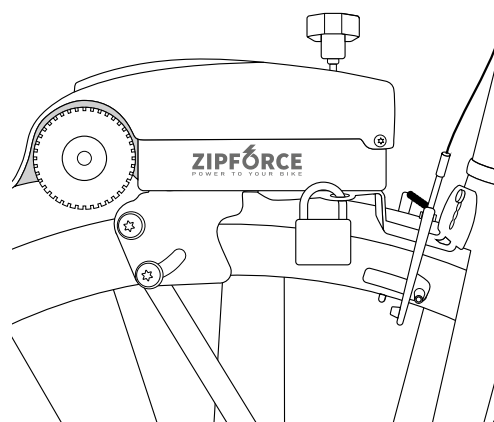
1. Bend the special fitting to the right or left, depending on which side you want to attach the bicycle light to.
2. Screw the special bracket into the holes on the motor bracket where the bracket screws are located.
3. Fix the bicycle light to the hole with the supplied screw.



17

LOCK THE ZIPFORCE

1. Clip the Zipforce into the motor bracket.
2. Insert a padlock through the two holes in the motor bracket lever.
3. Now it is not possible to remove the Zipforce from the motor bracket. Perfect if you are going to leave the Zipforce for a short while.



IMPORTANT INFORMATION

- It is very important that the bicycle wheel the Zipforce is fitted to is properly attached to the bicycle. Check this before riding.
- In the raised position, the distance between the wheel and the Zipforce drive wheel must be a maximum of 3 mm, see step 7, otherwise there is a great risk that the drive wheel will slip when the engine is screwed into the drive position. There will not be enough grip in the lowered position if the initial distance is too great. Improper fitting will lead to excess wear of the drive wheel.
- NOTE! Do not ride with the Zipforce turned off while it is screwed down onto the tyre. You must also not start cycling and then turn on the Zipforce.
- Only use the Zipforce on bicycles with front and rear brakes that are in good working order.
- Only use the Zipforce on bicycles with the right type of tyres, go to: zipforce.io/faq/

SCOPE AND LIMITATIONS OF USE

- The Zipforce is mainly intended for use on asphalt or gravel roads.
- Never screw down the clamping screw to lower than the point where it is just touching the unit's cover. Otherwise, the plastic cover may be damaged.
- The Zipforce may become hot during intensive use. The unit has built-in protection against overheating, causing temporary power loss when the protection is activated.
- Be careful when back-peddalling or using regeneration on slippery roads.
- Only install the Zipforce on robust bicycles with well-functioning rear and front brakes. The bicycle must comply with the standard SS-EN ISO 4210-4, 6, 8:2014.
- If you have or need a bicycle basket, visit: zipforce.io

Stop charging in the following situations:

- **If the battery isn't reaching full charge after 6 hours, see the troubleshooting guide.**
- **The Zipforce gets hot (> 50°C) when charging.**

A bicycle helmet must be used when cycling!

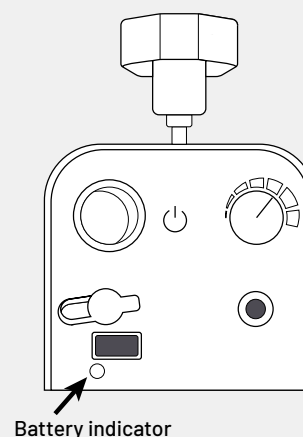
CARE ADVICE

- Keeping the clamping screw lubricated prevents it from jamming in the locking mechanism. Grease the screw and be sure to grease the part that protrudes out under the unit.
- Wipe the motor with a cloth, especially after use in rain and dirt.
- If you are going to put the Zipforce into winter storage, wipe it with a slightly damp cloth and charge it to around 60%.
- The Zipforce should always be turned off when not in use. When transporting it, be careful not to damage the buttons and clamping screw.

Do not use a pressure washer on the Zipforce, as it may introduce gravel, dirt and water into the electronics and mechanical parts.

BATTERY INDICATOR

Indication	Meaning
Solid green light	The Zipforce has 100-50% battery charge level.
Solid orange light	The Zipforce has 50-25% battery charge level.
Solid red light	The Zipforce has 25%-0% battery charge level.
Flashing red light	The Zipforce is discharged, at 0% battery charge level.
Solid blue light	Indicates that charging is in progress when the Zipforce is charging.



TROUBLESHOOTING GUIDE

The indicator flashes red	The Zipforce is not charged. Charge the unit. The LED on the charger will turn green when charging is complete.
The Zipforce slips against the wheel	Inflate the tyres and tighten the clamping screw so that there is firm pressure on the tyre. In wet road conditions, more pressure is required against the tyre. If necessary, reduce the power using the power control.
The Zipforce never gets fully charged (LED on charger doesn't turn green)	Make sure you are charging with the supplied charger. Launch the device and check the battery charge level on the LED or connect the Zipforce app and see how much battery the Zipforce has. LED solid green indicates 50-100% battery. Red flashing light indicates a fully discharged battery. Provided that the Zipforce has received charge and is not hot, charging can start again.
The clamping screw has become stiff	Grease the screw and be sure to grease the part that protrudes out under the unit.
The Zipforce does not beep (as it should) when starting the device	Contact Zipforce.
Zipforce gets very hot when charging (>50°C)	Stop charging and contact Zipforce.
The Zipforce never starts to assist	Check that the pedal sensor is seated correctly. Place the Zipforce in the raised position so that the Zipforce and the bicycle wheel move freely apart. Rotate the bike pedals forwards. The pedal sensor has an LED that should flash red when pedalling forward. When reversing, the LED on the Zipforce should light up blue. If neither of these work, check that the pedal sensor connector looks intact. If the pins are intact, check that the distance between the pedal sensor and the ring is 2-3 mm. Also try adjusting the pedal sensor in height (see image 9-11). Should none of this help, contact Zipforce.
The engine runs poorly and cuts out	This is usually because the pedal sensor ring has become skewed. Check that the pedal sensor ring does not wobble vertically and sideways. See image 9-11.

TECHNICAL SPECIFICATIONS

Model	Zipforce Slim
Motor's rated output	250 W
Battery's rated voltage	22.2 V
Battery	9.6 Ah/211 Wh
Charging time	2,5 hours (4 A charger)
Estimated range max/min	40/20 km (37/18 miles)*
Maximum speed with assistance	25 km/h
Motor and battery weight	2 kg
Weight of bracket and pedal sensor	0.3 kg
Charger weight	0.4 kg
Motor dimensions	275x107x80 mm
Noise level	55 db vid 250 W och 22.5 km/h
Regenerative braking	Yes (back-pedal)
Electric bike class	Pedal Assist (Class 1)
Guarantee	One (1) year warranty
Certification	CE 2022 Prevas AB, EMC
Motor type	Front or rear mounted ungeared engine
Areas for use	City/countryside, asphalt/gravel road surfaces
Drive mode	Pedal sensing assistance
Maximum speed with assistance	25 km/h
Manufacturer	Zipforce AB, Dalagatan 76, 113 24 Stockholm, Sweden

*Maximum range is calculated for a person of 75 kg, provided that the control is at < 50% of "Max position" and flat road conditions without too many starts and stops. Around half of the power required to ride the bike should come from the user. The range is calculated on a standard battery. Zipforce provides a variety of battery options.

DETAILED DESCRIPTION OF THE ZIPFORCE/EQUIPMENT IN THE PACKAGE

Zipforce is a Swedish-made product intended to be fit to a typical bicycle to ease the effort required for cycling. It consists of the following main parts:

The Zipforce unit	Contains motor, battery and electronics.
The motor bracket	The bracket is fitted to the bike where motor assistance is required. Zipforce can be clicked in and out of this bracket, making it easy to take with you after cycling.
Pedal sensor	Detects pedal movements, fitted in line with instructions.
Charger	Used to charge the Zipforce.
Fitting kit	Parts for fitting the motor bracket to the bike's front fork and for fitting the pedal sensor. Fitting instructions included.

CHARGING

The Zipforce is charged only with the included charger 4A 25.2V, or another charger supplied by Zipforce AB intended to use with this product. It is important that only the intended charger is used! Improper charging may result in shortened battery life, damage to the battery or fire. The charger should be connected to the Zipforce before being connected to a wall socket. The charger is equipped with a LED that lights up green when the battery is fully charged and red when charging. The red charging light on the charger lights up when it is connected to the wall socket. Carrying out a full charge of the battery takes around 4 hours, if the battery is completely discharged. It is normal for the charger to get hot. Never place anything on top of or near to the charger or Zipforce in a way that would block heat from being vented away. Do not charge near combustible material. After charging is complete, disconnect the charger. Avoid leaving the Zipforce unattended while charging. Do not charge in temperatures below zero or high temperatures. Contact Zipforce if you suspect damage to the battery or if the device has been exposed to external influences.

REMOVAL

The Zipforce can be removed by loosening the centre bolt and fork clamps. The pedal sensor is removed by removing the clamping ring. Cable ties easiest to cut off with pliers.

WASTE MANAGEMENT

This symbol means that the product must not be disposed of with other household waste. This applies throughout the EU. To prevent possible damage to the environment and to health, caused by incorrect waste management, the product must be left at a recycling centre so that the equipment can be disposed of in a responsible manner. When leaving the product at a recycling centre, use the return management systems located where you are or contact Zipforce. Zipforce or the recycling centre will ensure that the product is disposed of in an environmentally satisfactory manner.

STANDARDS

The customer/bicycle owner is responsible for ensuring that the Zipforce is not used in combination with an unsuitable bicycle. The bike must be robust, have well-functioning front and rear brakes and not be dangerous in traffic in any other respects.

See standards below.

The Zipforce is developed in accordance with the European standard EN 15194: 2017 - EPAC References.

The following documents are related to this product/manual:

- SS-EN 15194: 2017 - standard that describes electric bicycles.
- EN ISO 4210-4, 6, -8:2014 - standard that describes requirements for a bicycle.
- Swedish Constitution - Traffic Ordinance (1998:1276)(SFS no: 1998:1276) - laws and regulations in traffic.

DECLARATION OF COMPLIANCE

We: Zipforce AB, Dalagatan 76, 113 24 Stockholm, Sweden

Declare: at our own risk that the following labelled products: The Zipforce Slim, to which this declaration relates, when used as specified, complies with the technical requirements of the standards and the essential requirements of the directives set out below.

Directive:

2014/53/EU Radio Equipment Directive (RED)

2006/42/EC Machinery Directive

2012/19/EU on waste electrical and electronic equipment (WEEE)

Standards:

EN 15194:2017 Bicycles - Electrically power assisted cycles - EPAC

EN 50581:2012 Technical documentation for the assessment of electrical and electronic equipment with regard to the limitation of dangerous substances.

Conflict minerals:

Zipforce does not knowingly use metals originating from the conflict regions of the Democratic Republic of Congo (DRC) or neighbouring countries.

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Måns Bengtsson, CEO

Zipforce AB



MORE INFORMATION

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