



ASSIOMA

UNO DUO

Art. 772-01 ASSIOMA UNO cycling power meter

Art. 772-02 ASSIOMA DUO cycling power meter

User Manual

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EN

Quick start

1. Switching on **Assioma** (*Chap. 5*).
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 - Configuration of power fields (*Chap. 9.2*).
 - Crank-arm length (*Chap. 9.3*).
6. Manual zero offset (*Chap. 10*). **VERY IMPORTANT**
7. Using **Assioma** for the first time on road or rollers (*Chap. 11*).



It is essential to perform a manual zero offset adjustment **any time the pedals are reinstalled**, otherwise the data may not be displayed correctly. For maximum precision, repeat the operation before every use.

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1. Versions

Assioma UNO	left pedal with power sensor, right pedal without power sensor	Art. 772-01
Assioma DUO	Left and right pedals with power sensor	Art. 772-02

2. Package content

- **Assioma** pair of pedals with sensor (1 sensor for **Assioma UNO**, 2 sensors for **Assioma DUO**).
- 1 battery charger with EU, US, UK, AU plug adaptors (IEC Types C, A, G, I).
- 2 m USB/micro USB cable (1 cable for **Assioma UNO**, 2 cables for **Assioma DUO**).
- Magnetic charging connector (1 connector for **Assioma UNO**, 2 connectors for **Assioma DUO**).
- 2 red cleats (6° float), 1 8 mm hexagonal wrench, 4 washers.
- User manual, Safety instructions, Warranty information.

3. Product description

Assioma is a pedal for racing bicycles with a quick clip system, provided with power sensor to measure the force applied to the pedal during the pedal stroke.

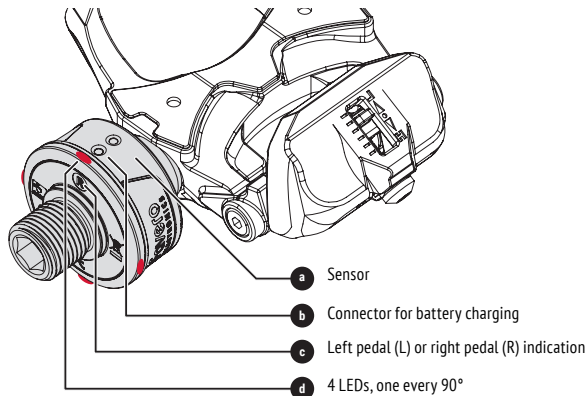
This pedal includes the function of cadence meter and can calculate the power of a single leg in real time, sending it to the bike computer.

It is provided with a 50 hour rechargeable battery and is designed to guarantee many years of use. Therefore, there are no openings with gaskets for the replacement of the battery.

Assioma is fully sealed (IP67) thanks to its case without openings and all its internal components are immersed in a special filling resin.



For radio communication, **Assioma** is compatible with the ANT+ standard and Bluetooth v4.0 standard, or later version. The use of Bluetooth v4.0 in smartphones started in 2011 - 2012.



4. Warnings



Please carefully read this manual and the safety instructions before installing the product. An incorrect installation may lead to accidents and possible damage to things and/or injury to people.

If you have any doubts about your ability to install the product, we recommend you to ask for the assistance of a specialized mechanic. An incorrect installation may cause or result in irreparable damage to the product which shall not be covered by the warranty. Before starting to ride, check that the force necessary to release your shoe from the pedal is suitable.



Visit the YouTube channel: **Favero Cycling** to see the detailed video installation.
https://www.youtube.com/Favero_cycling

5. Switching on Assioma

Assioma will automatically switch on by turning the pedals or starting to ride and will automatically switch off after 5 minutes of inactivity.



When using **Assioma** for the first time, connect it to the supplied battery charger for a few seconds to switch it on. Follow the same procedure if **"Travel mode"** has been activated from the Favero Assioma app.

If the LEDs do not blink, charge the battery as indicated in *Chap. 12*.
For LED behavior read *Chap. 18*.

6. Activating Assioma

Assioma must be activated to measure the power and cadence. If it is not activated, such measuring will not be performed. The activation also determines the start of the warranty period, allows updating the software and sending diagnostic reports to check the correct operation of the product.

Activation is obtained with the specific **"Favero Assioma"** app, available both for iOS and Android. The app can be downloaded free of charge.



Make sure that your smartphone is compatible with the Bluetooth v4.0 standard or later versions, and that your internet connections is active.

Open the app and follow the instructions to perform the search, the connection to your device and the activation. If **Assioma** does not appear in the search section, make sure that it is not already connected via Bluetooth to another device (e.g. bike computer).

For more information, read the FAQs on the website: cycling.favero.com.

7. Fixing the pedals to the crank-arms

7.1. Washer use

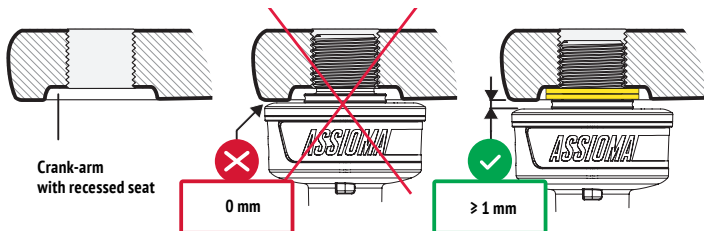
The washers supplied are only necessary in the following cases:

- The crank-arm producer requires the use of a washer.
- The crank-arm has a recessed seat and one or two washers must be used to ensure a free space between sensor and crank-arm.



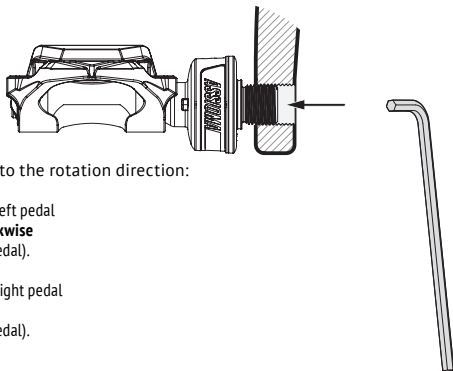
Pressing the sensor against the crank-arm when tightening the pedal may damage it. This operation would invalidate the warranty. If necessary, use 1 or 2 washers to ensure a free space of at least 1 mm between the sensor and crank-arm.

If a cadence sensor is fitted near the pedal, remove it to avoid any contact with the **Assioma** sensor.



7.2. Tightening the pedals

Before tightening the pedals, apply a thin layer of grease to the pedal axle thread. Tighten the pedal to the crank-arm using the supplied 8 mm hexagonal wrench at a tightening torque of about 35-40 Nm (25-30 ft lb), a standard torque for the tightening of many pedals. If the crank-arm producer specifies a different tightening torque, apply it.



Pay attention to the rotation direction:

- Tighten the left pedal **counter-clockwise** (facing the pedal).
- Tighten the right pedal **clockwise** (facing the pedal).

8. Cleat fixing, shoe position check and cleat release force adjustment

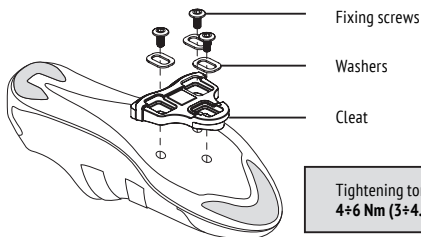
8.1. Cleat fixing



Use only the supplied cleats (red cleats, float 6°) or original LOOK Kéo cleats. The use of non-original LOOK Kéo compatible cleats may be unsuitable and any damage to the product will not be covered by the warranty.

To fix the cleats, use the supplied screws and washers.

Align the cleat in the preferred position and tighten the screws with a tightening force of 4 ± 6 Nm (3 ± 4.5 ft lb), as for most of the cleats on the market.



Black cleats are also available for separate purchase (float 0°), Art. 771-40.

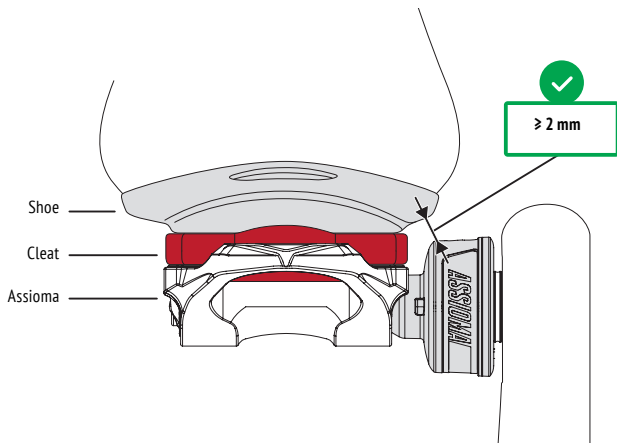
8.2. Shoe position check

Thanks to its reduced dimensions, the sensor never comes into contact with the shoe even when large size or flat-soled footwear is worn.



Before starting to ride, check that the distance between the shoe and the sensor is at least 2 mm. Do not use the product if the sensor is in contact with the shoe, the shoe cover or the cleat, as it can be damaged and this would invalidate the warranty.

If the distance between the sensor and the shoe is less than 2 mm, move the cleat to the most appropriate position or insert spacer Art.771-45 between the cleat and the shoe sole.

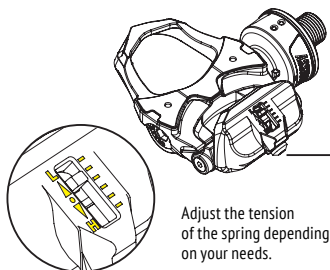


8.3. Cleat release force adjustment



Before starting to ride, try to release the shoe several times and make sure that the release force is suitable.

The **correct direction** to unclip is external to the bike.



Adjust the tension of the spring depending on your needs.

The spring tension can be adjusted using the screw shown in the picture. To increase the tension turn clockwise; to decrease the tension, turn counter-clockwise. Use a 3 mm wrench (not supplied).



9. Bike computer configuration

9.1. Pairing Assioma to the bike computer

The pairing procedure associates **Assioma** to the bike computer to start the radio communication between the two devices.

Please read the bike computer manual to learn how it performs the search and pairing of a power sensor. Make sure that **Assioma** is switched on before proceeding (*Chap. 5*).

Each **Assioma** has a unique 5-digit identification number (ANT+ ID) written on the packaging. This number identifies **Assioma** in the list of devices which can be paired with the bike computer.

Bike computers require that only the left pedal be paired. The left pedal will transmit also the data collected by the associated right pedal.

On Bluetooth bike computers and other devices with Cycling Power Profile (CPP), the left pedal can be recognized by an L that follows the identification number.



Important warnings to avoid communication problems during pairing:

- Make sure there are no other power meters switched on nearby (10 m).
- The bike computer must be within 2 m from **Assioma**.
- For Bluetooth devices only: make sure **Assioma** has not already been paired or connected via Bluetooth to another device or app.
- If you set Assioma DUO in "Dual channel L/R" mode, the right pedal sensor can be recognized by the R ID identification number written on the outside of the box. For more information, see *Chap. 17*.

9.2. Configuration of power fields

Once the pairing procedure has been completed (*Chap. 9.1*), it is possible to configure the bike computer so that it displays the power data in the preferred way: please refer to the bike computer manual.

It is recommended to at least set the following parameters: 3 second power, 30 second power, cadence, 30 second average balance.

9.3. Crank-arm length

The crank-arm length affects power calculation: Assioma must know this length. An incorrect value will lead to incorrect power values.

Please refer to the bike computer manual to learn how to set the crank-arm length.

If the crank-arm length cannot be set on the bike computer, set this parameter using the **Favero Assioma App**.



Do not set the crank-arm length via the Favero Assioma App if the bike computer already allows this operation; the set value would be overwritten.

10. Manual zero offset

Each **Assioma** sensor is factory calibrated to ensure its guaranteed precision under any operating conditions, including ambient temperature variations, for which automatic compensation from -10°C to +60°C is active.

No return to the Manufacturer is therefore necessary for periodic calibration.

However, it is important to periodically perform a "manual zero offset" on your bike computer or app; to eliminate any measurement variations which may have occurred over time, due to mechanical adjustments or impacts.

The zero offset function takes a few seconds and is often specified in the bike computer with the term "calibration".



Perform a manual zero offset adjustment **any time the pedals are reinstalled**. For maximum precision, repeat the operation before every use.

How to perform a manual zero offset:

- Switch on **Assioma**.
- Turn on the bike computer or start an app (*this function will be available also on the Assioma App from September 2018*). If **Assioma** is not detected, make sure it is not already connected via Bluetooth to another device.
- Release the shoes from the pedals and make sure that they are not in contact with anything.
- Place the bike vertically (not tilted) keeping it as still as possible. Otherwise, it will not be possible to complete the Zeroing. Reposition your bike before trying again.
- Place the crank-arms in the vertical position.
- Read the bike computer manual to learn how to:
 - Open the power sensor menu.
 - Press the "Calibration" or "Zero Offset" button.
 - Make sure that the zero offset adjustment was successful; usually the display shows a confirmation message or a 0 (zero).
 - Repeat the operation if an error occurs.



Sometimes the zero offset is slowed down or prevented if other ANT+ sensors (e.g. cardio band, cadence sensor) are enabled but switched off on the bike computer, as the bike computer searches them but cannot find them. In this case, it is necessary to switch them on, or disable them temporarily on the bike computer.

11. Using Assioma for the first time on road or rollers

On the first installation, **Assioma** will not send any power data to the bike computer until it has completed the internal self-calibration. **Assioma** self-calibrates while cycling by making a few tens of complete pedal strokes. To speed up the procedure, it is advisable to cycle seated, at a uniform pace and on a leveled road. Self-calibration can be considered completed once **Assioma** sends the power data to the bike computer.

12. Battery charge



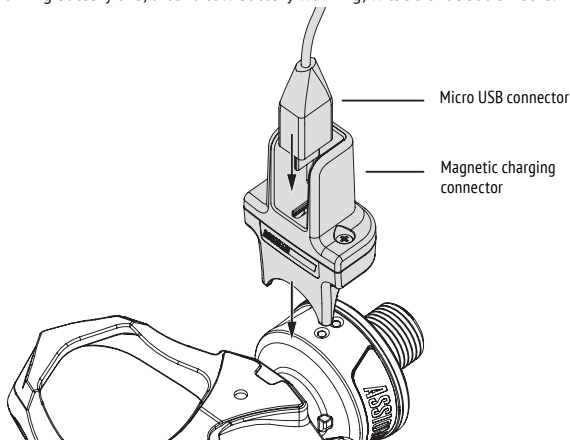
Assioma has an internal rechargeable lithium battery, with an approximately 50 hour life span. The capacity of each battery is tested during the manufacturing process.

The battery life is very long thanks to the low number of battery charges required. If you use **Assioma** for 15 hours a week, it is sufficient to charge it once every 3 weeks. The battery can also be charged when it is only partially discharged: this will further increase its life span.



If the product is not used for long periods of time, charge the battery anyway at least every 3 months in order to avoid the risk of irretrievably damaging the product.

When the battery of a pedal runs low, the bike computer will display a warning. The remaining battery life, after a low battery warning, will be of about 8 hours.



To charge the batteries, follow the procedure below for each sensor:

- Connect the battery charger supplied to an electrical socket.
- Connect the USB cable supplied to the battery charger.
- Insert the micro USB connector into the magnetic connector (see the picture).
- If the sensor contacts are wet or dirty, dry or clean them with a dry cloth.
- Connect the magnetic connector to the pedal as indicated in the picture: the LEDs switch on and remain switched on during the entire recharging. Once recharging has been completed, the LEDs will blink every 0.5 seconds.

Recharging a completely discharged battery takes about 6 hours.



Recharge at a temperature ranging between 5°C and 40°C. Beyond this range, recharging is blocked to protect battery functionality.



If necessary, **Assioma** can also be charged with a common smartphone battery

charger, instead of using the one supplied.

When a socket for battery charger is not available, a common "power bank" can be used. To charge two sensors at the same time, use a model with 2 USB ports. Some models are not able to fully charge the battery as their minimum charge current is higher than 50 mA.

13. Transforming Assioma UNO into Assioma DUO

Assioma UNO measures the power only on the left pedal. It is possible to buy the right pedal with the sensor (art. 772-51) at a later date and therefore pass to a system equal to **Assioma DUO**. The left pedal must be paired to the new right pedal using the **Favero Assioma** app.

14. Removing the pedals



To remove the pedal, use the supplied 8 mm hexagonal wrench:

- Unscrew the LEFT pedal **CLOCKWISE** (facing it).
- Unscrew the RIGHT pedal **COUNTER-CLOCKWISE** (facing it).

15. Reinstalling the pedals (on another bicycle)

Any time the pedals are moved from one bicycle to another, a manual offset must be performed (*Chap. 10*).

Once the pedals are reinstalled, the power and cadence data displayed on the bike computer are no longer reliable until **Assioma** performs an internal self-calibration.

Assioma self-calibrates while cycling by making a few tens of pedal turns. To speed up the procedure, it is advisable to ride seated, at a uniform pace and on a leveled road.

16. Compatible bike computers

Assioma is compatible with any ANT+ bike computers with Bike Power (PWR) profile.

For the complete list of the ANT+ certified products, visit the website:

<http://www.thisisant.com/directory/> (select "Bike Computers" in the Categories menu).



It is advisable to install the latest firmware version available from the bike computer manufacturer.

If you buy a new bike computer, we suggest the purchase of a model having a "CT" (Crank Torque) ANT+ profile, which ensures a better stability of the power being displayed.

17. App compatibility

Assioma is preset in a "Unified channel L" mode that ensures the greatest possible compatibility with apps that manage data transmitted by power meters.



A small set of Bluetooth bike computers and apps might require a change in the preset "Compatibility with other apps" parameter from the Favero Assioma app. Before changing the "Unified channel L" setting to "Dual channel L/R", we recommend contacting your cycling app Support to find out what the best solution is.

18. LEDs behavior

Fast and continuous blinking for 3 seconds	<ul style="list-style-type: none"> indicates that Assioma is being switched on.
Short blinking every 3 seconds	<ul style="list-style-type: none"> indicates that Assioma is switched on.
Fixed light	<ul style="list-style-type: none"> indicates that the battery is being charged.
Short blinking every 0.5 seconds	<ul style="list-style-type: none"> indicates that the battery charging has been completed.

19. Inspection and maintenance



Carefully inspect the product before starting a cycling session; check all parts for damage, cracks, loose parts and signs of wear. Do not use the product unless you have carefully checked and replaced any worn or damaged parts.



If the product is not in perfect conditions, its use may be the cause of accidents, damage to things and/or injuries to people, as well as the cause of early degradation of the product and its performance.

Clean **Assioma** with a damp cloth.

Do not use aggressive chemicals such as: gasoline, gas oil and petrol by-products in general, alcohol, industrial or all-purpose degreasers, etc. Do not use high pressure cleaners.



Periodically check that the end cap (*Chap. 25*) is correctly tightened. Before each cycling session, check that the pedals and cleats are properly working. If the cleats are worn out, they may cause accidents.

Do not attempt to open or disassemble the sensor as you may damage it and invalidate the warranty. Assistance must be carried out only by a specialized technician, authorized by Favero Electronics.

20. Spare parts

For more information on spare parts, visit the website cycling.favero.com.

21. Product troubleshooting

Over- or underrated power

- Perform a zero offset with the bike computer (*Chap. 10*).
- Check if there is any contact between the shoe, or shoe cover, and the sensor (*Chap. 8.2*).
- Check the setting of the crank-arm length (*Chap. 9.3*).

Faulty left/right balancing

- Perform a zero offset with the bike computer (*Chap. 10*).
- Check if there is any contact between the shoe, or shoe cover, and the sensor (*Chap. 8.2*).

Cadence and power are not displayed

- Activate the product (*Chap. 6*).
- Configure the bike computer (*Chap. 9*).
- Perform a zero offset with the bike computer (*Chap. 10*).
- Ride uniformly to allow self-calibration (*Chap. 11*).

The LEDs do not switch on

- Fully charge the product (*Chap. 12*).
- Make sure that the battery charger and the cables supplied are correctly working (*Chap. 12*) or use a common smartphone battery charger.

There is no connection to the Favero Assioma app

- Enable the Bluetooth connection on your smartphone.
- Make sure that the smartphone is compatible with the Bluetooth v4.0 standard or later versions.
- Disable and again enable the Bluetooth connection on your smartphone.

The force necessary to engage and release the shoe from the pedal is not the one wanted

- Adjust the tension of the springs using the adjusting screw (*Chap. 8.3*).



For more information, read the FAQs on the website: cycling.favero.com.

22. Copyright

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It is forbidden to reproduce this manual in full or in part unless explicit written consent is obtained from Favero Electronics.

The manufacturer reserves the right to improve or modify the product and this manual without any obligation of prior notice to private users or organizations. **Assioma®** is a registered trademark of Favero Electronics. LOOK and Kéo trademarks belong to LOOK Cycle International. All other trademarks and registered trademarks are the property of their corresponding owners.

23. Warranty

All the information related to the product warranty are contained in the "Warranty" leaflet supplied with **Assioma** or which can also be downloaded from the cycling.favero.com website.

24. Technical features

Product name:	Assioma UNO (art. 772-01), power sensor installed only on the left pedal Assioma DUO (art. 772-02), power sensor installed on both pedals
Radio protocol:	ANT+ PWR (CT + PO) profile, Bluetooth v4.0 2.4GHz ISM band, RF power max 4dBm, GFSK modulation

Transmitted data:	power (watt), cadence (rpm), L/R balance % (only for Assioma DUO), torque effectiveness (TE), pedal smoothness (PS)
Minimum and maximum power:	0 - 2000 W
L/R balance:	0-100% (only for Assioma DUO)
Minimum - maximum cadence:	30 - 180 rpm
Power measuring accuracy:	± 1%
Cadence sensor:	internal, built-in
Internal battery:	rechargeable lithium battery with a 50 hour life charging: 5Vdc max 100mA
USB Charger	see charger specification
Total pedal weight with sensor:	152.4 g
Pedal weight without sensor:	128 g
Pedal axle material:	AISI 630 H900 stainless steel
Pedal axle threading:	9/16"-20 TPI
Bearings:	no.3 sealed cartridge bearings
Operating temperature:	-10 / +60 °C
Battery charging temperature:	+5 / +40 °C
Protection degree:	IP67
Certifications:	CE, FCC, RoHS, ANT+, BLE
Reference standards:	EN14781, EN60950
Compatible cleats:	FAVERO red cleats (art. 771-42), black cleats (art. 771-40), LOOK Kéo cleats (only original).
Max cyclist weight:	120 Kg ¹
Warranty:	2 years

¹ This product has been designed for weights no higher than those clearly specified.
A person exceeding the weight limit herein specified will use this product at his/her own risk.

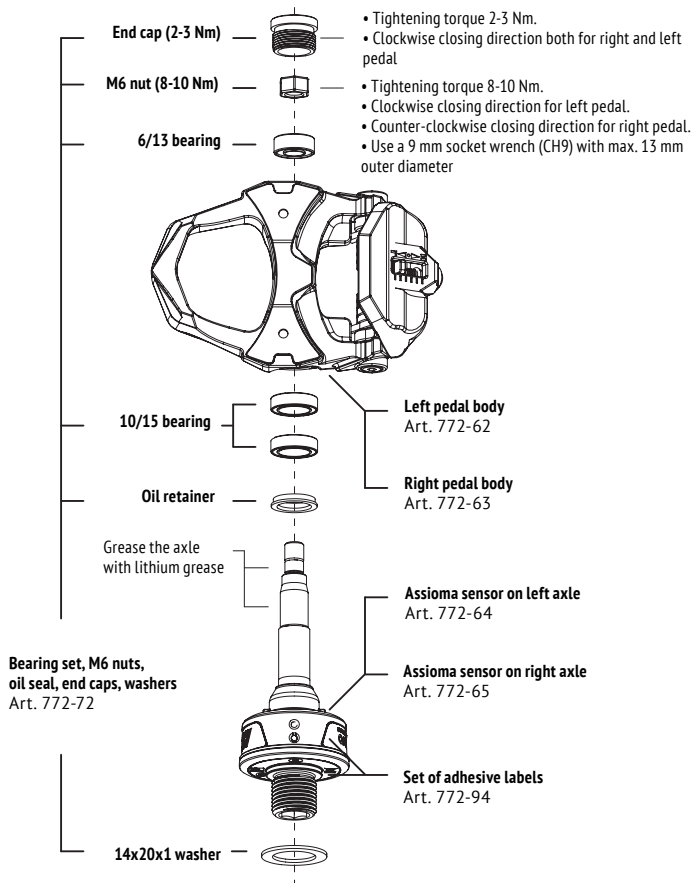
This product is ANT+ certified and complies with the ANT+ specifications:
www.thisisant.com/directory



This product is certified to be a Bluetooth low energy technology product.



25. Exploded view of the components



1. FCC Statement

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

- (1) This device may not cause harmful interference,
- (2) this device must accept any interference received, including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Because of Assioma limited size, the FCC ID label is placed in this manual and on the packaging or on a removable label attached to the device.

Favero Electronics Srl

Model: ASSIOMA
FCC ID: 2ATKD-ASSIOMA

This device complies with Part 15 of the FCC rules subject to the following two conditions:

- 1) This device may not cause harmful interference.
- 2) This device must accept all interference received, including interference that may cause undesired operation.



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