



Lock8 G1 – Technical Manual

Revision History

Date	Version	Description	Author
24.08.2015	V1.0	Internal draft	Roman Laabs
27.08.2015	V2.0	Internally reviewed version	Roman Laabs
09.09.2015	V3.0	ACB reviewed version	Roman Laabs

Table of Contents

Document Purpose.....	3
Package Content.....	3
Product Specifications.....	3
Lock Installation.....	4
Preparation.....	4
Installation.....	4
Bike Preparation	4
Installing the clamp	6
Mounting the lock	7
Charging Connection Set-Up	8
Preparation.....	8
Installation.....	8
Important security and usage information	9
Transport and handling	9
Repairing or modifying Lock8.....	9
Charging Lock8	9
Usage of connectors and contacts	10
Danger of suffocation.....	10
Hazard areas.....	10
Acceptable range of temperatures	10
Cleaning the body of Lock8	10
Protection from HF-Energy.....	10
HF-Interferences.....	10
Airplanes.....	11
Motor vehicles.....	11
Cardiac pacemakers	11
Hearing aids.....	11
Other medical devices.....	11
Hospitals and medical practices	11
Blasting sites and public institutions	11
Important directions for using Lithium-Ion-Batteries	11
FCC.....	12

Document Purpose

This document aims at giving Lock8 G1 Operators the background information and instructions necessary to set up the lock and make use of the BLE analyzer.

The first chapter guides through the steps of the initial installation of the Lock8 device. The second chapter explains how to set up the charging connection. In the third chapter, the Lock8 BLE Analyzer is introduced as a helpful tool for debugging and analysis of the Lock8 device.

The first two chapters need to be seen as general guidelines and in some cases the bike that is used or other environmental factors can make it necessary to step away from the guidelines. Generally, we expect the devices to be installed by bike mechanics or people with the technical abilities necessary to perform the explained steps.

Attention:



Paragraphs in red font and marked with an exclamation mark contain safety hints and troubleshooting suggestions.

Maintenance:



Paragraphs in blue font and marked with a wrench contain maintenance suggestions.

If you have any questions regarding this manual or the use of the device, please contact us directly at:

support@lock8.me

Package Content

1. Lock8 device
2. Top & bottom clamp, 4x M5 screws, 2 protective self-adhesive rubber pads
3. Hub dynamo connection cable
4. ABUS cable (optional)
5. 2x plastic caps (optional)

Product Specifications

Power and battery

- Built-in rechargeable Lithium Ion Battery (3.7V, 2600 mAh)

Sensors

- Three-axis gyroscope and accelerometer

Alarm

- Alarm sound up to 100dB

Case

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- Industrial strength Polycarbonate shell
- Weight: 350g (excl. clamp and cable)
- Weather resistant (IP54)

Environmental requirements

- Operating temperature: -10°C to 35°C
- Ideal charging temperature: 5°C to 30°C
- Storage temperature: -20°C to 45°C
- Relative humidity: 5% to 95% non-condensing
- Maximum operating altitude: 3,500m

System compatibility

- Apple iPhone 4S or later with iOS 8.1 or later
- Android 5.0+ devices with Bluetooth 4.0

Lock Installation

Preparation

To install the lock to the bike, you will need the following parts of the Lock8 G1 product package:

- Top Clamp
- Bottom Clamp
- Rubber pads
- Clamp screws
- Seal sticker

Additionally, you will need the following tools (not part of product package):

- Hex-key (5/32" / SW4)

Installation

The installation of the lock consists of the following three steps:

1. Bike preparation
2. Installing the clamp
3. Mounting the lock

Bike Preparation

1. Make sure the position where the clamp will be mounted on the bike is free from any obstructions like a coastal clamp or a stand.

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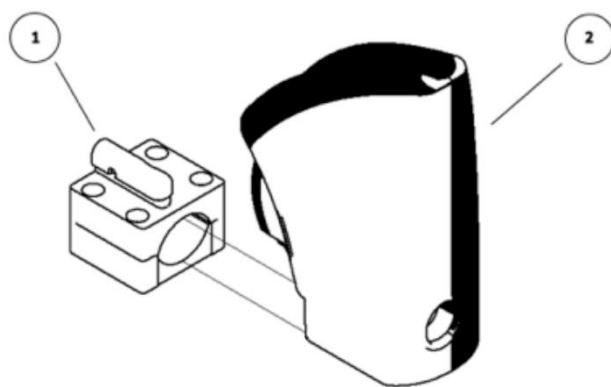
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2. Remove the safety paper from the rubber pads and press them into the insides of the top and bottom clamp. Make sure they are aligned correctly and are not protruding on either side. Keep pressing for a few seconds until they stick to the inside of the clamp.



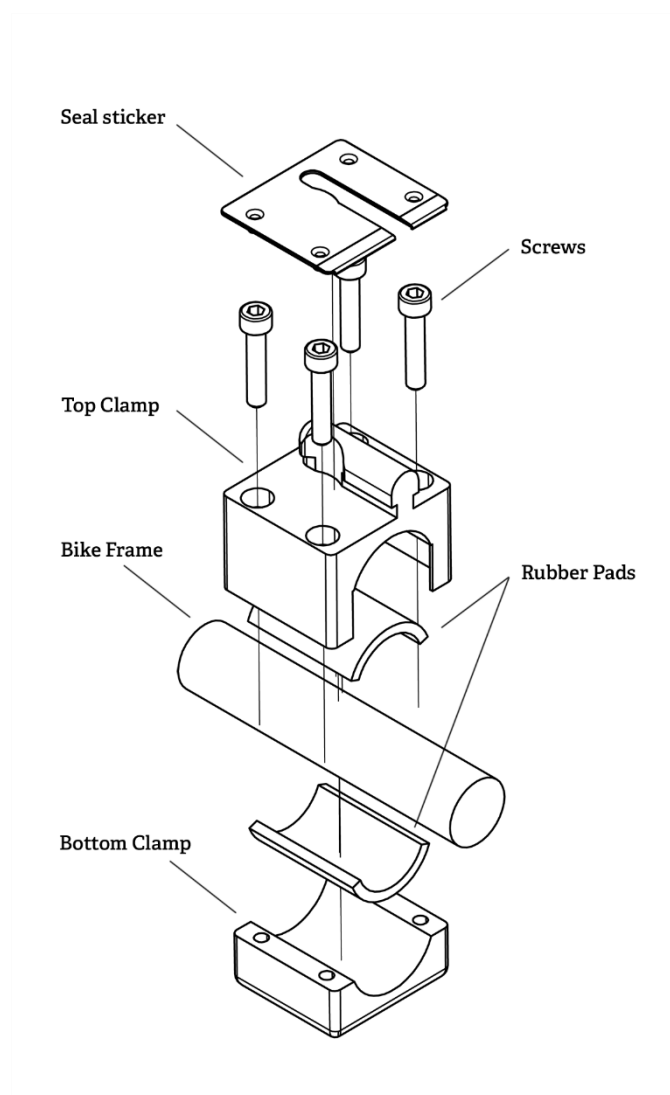
1 - Top and bottom clamp



2 - Installation

Installing the clamp

Please refer to the following picture for the order of installation:



3 - Clamp installation

1. Put the top and bottom clamp around the bike frame. Make sure the top clamp is pointed in the right direction (round end of lip is pointed towards the front of the bike). The bottom clamp can be aligned in either direction.
2. Insert the screws, but do not tighten them fully. Make sure you can still move the clamp on the frame easily but none of the screw heads are sticking out.
3. Mount the lock onto the clamp (the lock itself has to be in the *unmount* position).
4. Move the lock and clamp as far to the right as possible, until the rubber case hits the upper frame. Move it about 2mm back, so that there is some space between the rubber and the lock. Unmount the lock, make sure the clamp stays in the same position.
5. Tighten the screws without changing the position of the clamp and apply the seal sticker.

Maintenance:



After a few rides, retighten the clamp screws if they have loosened. After that, tightening the screws should be performed as part of regular bike maintenance.



4 - Mounted clamp

Mounting the lock

1. Now, the lock can be put back onto the clamp. For that, it has to be in the “unmount” position. Slide the lock onto the clamp until the very end position is reached.

Attention:



Make sure the lock is in the unmount position when trying to mount it onto the bike. The position can be reached by entering the operator menu in the Lock8 App.

2. The lock can be fixed by going into the *lock* or *unlock* position. Check if the lock is fixed properly and cannot be un-mounted by force.

Attention:

! Make sure that reaching the end position is not blocked by the bike frame. If that is the case, the clamp is mounted too far to the back of the bike and needs to be adjusted.



5 - Mounted lock

Charging Connection Set-Up

Preparation

To ensure regular charging of the device, every bike should be equipped with a hub dynamo, or in the case of e-bikes, the battery pack should be used to charge the lock. To set up the connection, you will need the following parts of the product package:

- Hub Dynamo Cable

Additionally, you will need the following tools (not part of product package):

- Pincers
- Wire stripper
- Wire straps

Installation

1. Mount the lock onto the clamp (See Mounting the lock).
2. Unwrap the hub dynamo cable to measure the correct length needed from the lock to the connection with the hub dynamo. Find a good position to place the black box with the charging circuit.

Attention:

! The charging cable has to be connected to the hub dynamo directly. Do not connect it to either front or back light.

3. Cut the cable into the proper length, using the pincers.

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4. Use the wire stripper to remove the insulation from the cable.
5. Twist the copper ends and insert them into the hub dynamo plug.

Maintenance:



As part of regular bicycle maintenance, make sure the cable ends have not been unplugged from the hub dynamo and lock charging is still performed regularly.

6. Use the wire straps to attach the cable to the frame of the bike.

Attention:



When fixing the cable to the frame of the bike, make sure it does not block any safety relevant movement or restrain the use of the bike.

Important security and usage information

For your own safety, we recommend reading the following safety and usage information before using Lock8.

Transport and handling

Lock8 contains sensitive electronic components. Don't drop, disassemble, open, break, perforate, disintegrate or bend the device with force. Do not throw it into open fire. Do not heat it in a microwave oven or insert objects into the lock.

Repairing or modifying Lock8

Do not attempt, in any case, to repair or modify Lock8 on your own. Disassembling Lock8 may cause damage that is not covered by the warranty.

Charging Lock8

Please use solely the following components in order to recharge Lock8: the provided hub dynamo cable and the provided mains-adapter.

Read carefully all security instructions provided with other accessory products before using them with Lock8. The Velolock Germany GmbH is not liable for third party products conforming to the security guidelines and standards for radio shielding.

If using the mains-adapter to recharge Lock8, please make sure that lock and the mains-adapter are fully connected. Then connect the mains-adapter tightly to the wall outlet. Do not use the mains-adapter with damp hands.

Disconnect the mains-adapter from the mains supply in the following cases:

- Loose cables are showing at the mains cable or at the mains plug or either cable or plug are damaged.
- The mains adapter has been exposed to rain, liquids or strong humidity.
- The body of the mains adapter has been damaged.
- You think the mains adapter has to be serviced or repaired.

- You want to clean the mains adapter.

Additional Non-User-Replaceable Battery Warning: Do not remove or attempt to remove the non-user-replaceable battery.

Usage of connectors and contacts

Please never attempt to force the mains plug into the power outlet. Check for foreign material in the connector. If the mains plug can't be connected remove from the power outlet, as it probably doesn't match the specific power outlet. Make sure that mains plug and power outlet are compatible and that the mains plug is correctly aligned in the power outlet.

Danger of suffocation

Lock8 contains small parts that may be possibly swallowed by children and hence may be a choking hazard. Please always keep Lock8 out of children's reach.

Hazard areas

Do not use Lock8 while in hazard areas. Do not charge Lock8 and obey to all danger signs and directions. In such environments, sparks may cause explosions or fires that lead to severe injuries or even death. Hazard areas are mostly, but not always, clearly marked. Such areas may possibly be: gas pumps and filling stations, the below deck areas on ships, facilities for the storage or distribution of fuel or chemicals, vehicles that are powered by liquid gas (i.e. Propane or Butane), areas in which the air contains chemicals or particles (i.e. grains, dust, metal powder), as well as other areas in which it is advisable to turn off the engine of a vehicle.

Acceptable range of temperatures

Please only use and store Lock8 only in the specified temperature ranges. Lower or higher temperatures may possibly shorten the life cycle of the battery or temporarily affect the functionality of Lock8. While using Lock8, please avoid extreme changes in temperature or air humidity, because they may cause condensed water on or inside Lock8. Do not leave Lock8 inside of a car, because the temperatures inside a parked car may fall below or rise above the recommended range.

Cleaning the body of Lock8

Before cleaning Lock8, please disconnect all cables. In order to avoid any damage do not use any aggressive cleaning detergent.

Protection from HF-Energy

Lock8 contains a radio transmitter and –receiver. Lock8 conforms to the recommendation of the European Council in order to protect the population from high-frequency energy [1999/519/EC] from July 12, 1999. If you are still concerned about possible influences of HF-energy, it is recommended to cut back the amount of time in which you are using Lock8, because the factor of time has an influence on the impact of HF-energy on a person. Mind the distance to the device, because the exposure sinks significant with increasing distance.

HF-Interferences

HF-emissions of electric devices may have a negative impact on the functionality of other electric devices and may lead to failure malfunction. Although the EU-limits to protect people from high-

frequency energy are strictly observed during development, testing and production, Lock8 may cause interferences with other electric devices.

Airplanes

The usage of Lock8 during a flight may be restricted. To switch off all radio transmitters inside Lock8 use the Lock8 smartphone App.

Motor vehicles

HF-signals from Lock8 may affect the electric systems of a motor vehicle. For further information, please contact the manufacturer of your car or an authorized service center.

Cardiac pacemakers

The Health Industry Manufacturers Association (HIMA) recommends a minimum distance of 15 cm between a mobile radio device and a cardiac pacemaker in order to avoid possible interferences. Persons with a cardiac pacemaker please regard the following precautionary measure: Make sure that Lock8 is always positioned more than 15 cm away from the cardiac pacemaker, when the mobile radio modem is switched on.

Hearing aids

It is possible that there are interferences between Lock8 and hearing aid devices. In that case, please contact the manufacturer of the hearing device or a physician in order to discuss alternatives or a possible relief.

Other medical devices

If you are using other medical devices, please turn to the manufacturer or your physician in order to make sure the device is protected against HF-signals.

Hospitals and medical practices

In hospitals and medical practices, medical devices are used that probably react very sensitive to external HF-signals. Please do not use Lock8 if the house rules of hospitals and medical practices ask for it.

Blasting sites and public institutions

In order to avoid interfering signals on blasting sites, please do not use Lock8 when approaching a blasting site or an area in which the usage of radio devices is prohibited. Please adhere to all prohibition signs and safety regulations.

Important directions for using Lithium-Ion-Batteries

1. Do not throw into fire.
2. Do not short circuit.
3. Do not disassemble.
4. Do not continue to use when damaged.
5. Dispose correctly.

FCC

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, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Caution: The user is cautioned that changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Note: 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.

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. End user must follow the specific operating instructions for satisfying RF exposure compliance. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter. The transmitter must not be carried or held in hand. A minimum distance of 20cm to the body shall be maintained at all times.

FCC ID: 2AFPAL8G10843