

SMART BRAKE USER MANUAL

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ABOUT THIS MANUAL

This manual is a complete system installation guide, from unboxing each component to start riding the bicycle. Complete the installation and setup in the order described in the manual. Do not begin a new section before completing the previous sections.

SmartBrake components are only compatible with other SmartBrake components and calipers using mineral oil, from Tektro and Magura. Consult www.mysmartbrake.com for compatibility information, and in case a separate manual is referenced in this document.

PRODUCT TYPE DESCRIPTION

SmartBrake is an electrical brake system that is mounted on bikes (with 2, 3 or 4 wheels), and in some cases sleds and wheelchairs for adaptive sports. The brake system uses supplied brake calliper for disc brake or a V-brake calliper for rim brake, that is activated from a servomotor via a hydraulic hose and chamber. The servomotor is electrically controlled from an electrical circuit. The electrical circuit is controlled via RF/Bluetooth (2,4GHz) from three different remotes: A hand controller, a thumb trigger remote and a brake lever remote.

RELATION TO OTHER DOCUMENTS

BOOKLET STRUCTURE

SmartBrake series manuals are split among several booklets, as described below. The latest manuals are available on our website www.mysmartbrake.com.

NAME	DETAILS
Tektro Auriga Twin User Manual	www.tektro.com
Magura MT2 User Manual	www.magura.com
Magura HS11 User Manual	www.magura.com
SmartBrake Technical Documentation	www.mysmartbrake.com
SmartBrake Declaration of Conformity	www.mysmartbrake.com

IMPORTANT NOTICE

- This dealer's manual is intended primarily for use by professional bicycle mechanics. Users who are not professionally trained for bicycle assembly should not attempt to install the components themselves using the dealer's manuals. If any part of the information on the manual is unclear to you, do not proceed with the installation. Instead, contact your place of purchase or a distributor for assistance.
- Make sure to read all manuals included with each product.
- Do not disassemble or modify the product other than as stated in the information contained in this dealer's manual.
- All manuals and technical documents are accessible online at www.mysmartbrake.com
- For consumers who do not have easy access to the internet, please contact a SmartBrake distributor or SmartGroup directly to obtain a hardcopy of the User's Manual.
- Please observe the appropriate rules and regulations of the country, state or region in which you conduct your business as a dealer.

For safety, be sure to read this dealer's manual thoroughly before use and follow it for correct use.

LEGEND

The following instructions must be observed at all times in order to prevent personal injury and physical damage to equipment and surroundings. The instructions are classified according to the degree of danger or damage which may occur if the product is used incorrectly

⚠ WARNING

Failure to follow the instruction will result in death or serious injury

⚠ WARNING

Failure to follow the instruction could result in death or serious injury

NOTICE

Failure to follow the instruction could cause personal injury or physical damage to equipment and surrounding.

SMART BRAKE COMPONENTS



Hand Control



Brake Lever



Brake Unit



Thumb Brake

ADDITIONAL COMPONENTS

Additional components may vary in different kits.



Tektro Disc Brake Caliper



Magura Rim Brake Caliper

TO ENSURE SAFETY WARNING

⚠ WARNING

Be sure to follow the instructions provided in the manuals when installing the product. Only use SmartBrake compatible parts. Consult SmartGroup for compatibility information. If a component or replacement part is incorrectly assembled or adjusted, it can lead to component failure and cause the rider to lose control and crash.



Wear approved eye protection while performing maintenance tasks such as replacing components.

⚠ WARNING

If you use SmartBrake equipment, **it is your responsibility** to learn proper use of the equipment, and you accept all risks, including those of injury, paralysis and death. SmartBrake equipment is specially designed for bicycles and wheelchairs, has limitations, and must not be used for other purposes.

Improper use or misuse increases the risks.

ALWAYS MAKE SURE TO OPERATE 2 – TWO – SEPARATE BRAKE SYSTEMS ON YOUR VEHICLE. DO NEVER TRUST A SINGLE BRAKE SYSTEM TO PROVIDE SUFFICIENT SAFETY DURING USE! BOTH SYSTEMS MUST BE FUNCTIONAL AND TESTED PRIOR TO ANY USE!

⚠ WARNING

Whenever you use the SmartBrake products, you risk death or serious injury from loss of control, collisions, and falls. To use SmartBrake safely, you must read and follow **all instructions and warnings in the User Manual**. In addition, you shall for any activity and application have a **secondary brake system (electronic, mechanical, manual), ready to use**.

Always wear a helmet when using a bicycle. Use an approved helmet that fits properly with the chin strap in place and provides protection for the back of your head. Avoid obstacles and slippery surfaces that could result in a loss of balance or traction and cause a fall.

Pay attention to all warnings and alerts from the SmartBrake products. They indicate unsafe operating conditions. You must learn about and understand the SmartBrake products safety alerts described in the User Manual and respond as instructed.

⚠ WARNING

Never attempt to use a SmartBrake product without the **SmartBrake Technology properly installed, charged and updated**. Using your SmartBrake products without all parts properly installed could damage your SmartBrake products and result in serious injury from loss of control, collisions, and falls. Apply good judgement in all use of SmartBrake products.

Do not modify the SmartBrake products. Modifications to the SmartBrake products without the prior written approval could interfere with the operations of the SmartBrake products, **could result in serious injury and/or damage, and could void the SmartBrake Limited Warranty**.

NOTICE

Learning to use your SmartBrake products

- 1) Follow all the instructions and warnings in the User Manual, and supplementary Instruction Videos (www.mysmartbrake.com)
 - 2) Make sure the SmartBrake products are fully charged and functional, prior to your trip
 - 3) Before each trip, Make sure your secondary brake system is functional and ready to use in any situation
 - 4) Start slow, learn to operate the SmartBrake in safe locations at low speed
 - 5) If any safety alert or irregularity occurs, stop use of SmartBrake immediately
-

BE SURE TO ALSO INFORM USERS OF THE FOLLOWING

NOTICE

- SmartBrake components are to withstand wet weather riding conditions; however, do not deliberately place them into water.
- Be careful not to get water into the charging port of the SmartBrake components.

- Do not clean Smart Brake with a high-pressure washer. If water gets into any of the components, operating problems or corrosion may result.
- Handle the components carefully and avoid subjecting them to heavy shock.
- Do not use thinners or harsh solvents to clean the products. Such solvents may damage the surface. When cleaning the products, use a cloth moistened with a neutral detergent diluted with water.
- If the brake operation does not feel smooth, consult the place of purchase for assistance.
- Keep away from magnetic objects. If this is not observed, problems with operation may occur. When installing a product that uses a magnet, make sure the magnet is set in the specified location before installing the product. Contact the place of purchase for updates of the component software. The most up-to-date information is available on the SmartBrake website.
- Products are not guaranteed against natural wear and deterioration from normal use and aging.
- For optimum condition and capacity of the battery, we recommend charging the battery indoors at room temperature. Furthermore, the use of the charger is only recommended when the ambient temperature is between 0 and 35 degrees Celsius.

CHARGING AND MAINTENANCE TIPS FOR THE BATTERY

- Never leave the bike with an empty battery! We advise you to charge the battery as soon as possible before it is totally empty.
- The best storage-charge of the battery is after 3.5 hours of charging.
- Recharge the battery every month during winter season
- Preferably store and use the battery in environments of 5 to 20 °C. Avoid higher or lower temperatures.
- Do not charge the battery in sunlight and make sure that the battery is not charged at a temperature of less than 0°C.
- Only use the charger indoors and in non-humid environments, the charger must not get wet.
- Preferably charge the battery with the supplied charger.
- The battery housing and charger housing may never be opened! When there is a problem, contact your dealer.
- The SmartBrake battery may not be revised due to serious safety risks and the incorrect functioning of the electric system as a whole. Contact your shipping company when sending defect batteries or products.
- Don't drop the product, this can cause external and internal damage.
- Keep in mind that your bike provides less support when it's cold (0°C and less) and the battery will discharge faster. Charging also takes more time at lower temperatures.

NOTICE

Every battery discharges automatically over time. This process is called self-discharge. A battery that is empty and not charged, will self-discharge and will be deep discharged. The battery can be permanently damaged during this process. In case of deep discharge, the warranty will be voided.

BRAKE CALIPERS AND BRAKING CHARACTERISTICS

SmartBrake is assembled with a variation of three different calipers

- a. Tektro Auriga Twin HD-T525 – Hydraulic Disc Brake
- b. Magura MT2 Sport – Hydraulic Disc Brake
- c. Magura HS11 –Hydraulic Rim Brake

NOTICE

SmartBrake does not have any certifications with use together with any of these calipers and cannot guarantee the same technical specifications as stated by the manufactures.

Performance will always differ, where some of the most important factors are:

- Total weight of user and vehicle
- Disc size and brand/type
- Wheel size
- Cleanness and maintains of vehicle and caliper
- Speed
- Climatic

⚠WARNING

This may cause longer braking distance resulting in hazards or fatal situations. Be sure to familiarize yourself with any changes in the braking characteristics of your vehicle during the first few rides.

Before assembling to your vehicle, make sure to check the calipers owner's manual for safety and specifications (as a guideline).

BRAKING LEAD TIME

The brake system is activated from a servomotor that works almost with a linear speed from 0 to maximum brake force. This means that it will take about 0.6+ seconds from initiating a braking sequence to achieving full power of the SmartBrake. The time it takes to achieve full brake power on your vehicle depends on the distance the brake pads is set from the braking surface and system bleeding.

⚠ WARNING

PRACTICE WITH SMARTBRAKE AT A SAFE PLACE BEFORE GETTING INTO POTENTIAL HAZARDOUS SITUATIONS

SIGNAL RANGE AND INTERFERENCE

- The remotes have some difference in signal distance due to transmitter tuning. Signal ranges within overhead line without obstacles for the SmartBrake product are as a reference:
- Brake Lever works about 30 meters.
- Thumb Brake works about 30 meters.
- Hand Control works about 40 meters.

NOTICE

Signal distance will vary depending on signal interference. This may be caused by physical objects, transmitters working on the same frequency or high voltage power lines. To obtain less interference, make sure that there is a free path between the brake remotes and brake unit.

FAIL-SAFE

If the signal gets broken between a remote and a brake unit for more than a second, the SmartBrake Fail-Safe will automatically initiate. This causes the brakes to apply without the user's activation.



FOR INSTALLATION TO THE BICYCLE AND MAINTENANCE

WARNING

- When operating the caliper, be careful not to allow your fingers to be caught between the brake pads. The motor in the brake unit is powerful enough to be operated without stopping until the piston position is reached and may cause serious injury if your fingers interfere with the brake motion.
 - Be sure to fully close any lids in front of charging ports.
-

HYDRAULIC CABLES

Secure the hydraulic cables with zip tie's minimum every 20 cm to secure that they do not interfere with the chainrings, sprockets or tires.

WARNING

When installing to the bicycle, do not forcibly bend the hydraulic cable. It may result in an oil leak where the result is lack of brake force which could result in serious injury or death.

NOTES ON REINSTALLING AND REPLACING COMPONENTS

When the product is reassembled or replaced, the new wireless components must be synchronized to the administrator brake unit.

If the component configuration changes or malfunction is observed, use the nRF Toolbox app to update the firmware of each component to the latest version and perform a check again. Also make sure that the nRF Toolbox app is the latest version. If the software is not the latest version, the component compatibility or the product functions may not be available.

CONNECTION AND COMMUNICATION WITH SMARTPHONE OR TABLET

nRF Toolbox can be used to carry out tasks such as updating firmware and customizing single components or the whole system, after connecting the SmartBrake (system or components) to a smartphone or tablet via Bluetooth® LE.

Check the following website for information on compatibility with each component and functional limitations: www.mysmartbrake.com

HOW TO UPLOAD A FIRMWARE AND WHICH ONE TO USE WHEN?

Watch video on how to transfer firmware files from pc to iPhone here:
<https://www.youtube.com/watch?v=QWfVpkNRItc&feature=youtu.be>

Watch video on how to transfer firmware files from pc to Android here:
<https://www.youtube.com/watch?v=Bj2FSl2ejdU>

BRAKE REMOTES

There are two types of firmware to all remotes, (except the Hand Control which always uses a "Administrator" firmware):

"Administrator" and **"Assistant"**.

In a setup with one brake remote:

Set the brake remote you want to use in Bluetooth mode and upload "...- **Administrator**" through the nRF toolbox App.

In a setup with two brake remotes (or more):

1. Set the brake remote you want to activate Fail-Safe if getting out of signal distance in Bluetooth mode and upload **"Administrator"** through the nRF toolbox App.
2. Upload **"Assistant"** to the other remote(s).

NOTICE

In a setup with two or more remotes, only one remote can be activated as an administrator. The rest of the remotes shall use assistant firmware.

You should never mix different remotes from different setups without knowing what firmware that the remotes use. It is not possible to check what firmware the remote use; if unsure, please upload the correct firmware again.

BRAKE UNIT

There are two different firmwares for the brake unit:

"Brake-Unit_Disc-Brake" and **"Brake-Unit_Rim-Brake"**.

In a setup with Disc brakes: Set the brake unit in Bluetooth mode and upload "Brake-Unit_Disc-Brake".

In a setup with Rim brakes: Set the brake unit in Bluetooth mode and upload "Brake-Unit_Rim-Brake".

SMART BRAKE BLUETOOTH MODE

BRAKE UNIT

1. Turn off the brake unit.
2. Connect the charger.
3. Press and hold the connection button until the brake lights turn on. The brake unit is now in Bluetooth mode.
4. When the brake unit is in Bluetooth mode it is visible at the nRF Toolbox App as "SmartBrake DFU".
5. To deactivate Bluetooth mode, press the activation button once.

BRAKE LEVER

1. Turn off the brake unit.
2. Push the lever all the way in.
3. When the LED display turns red, release the lever. The brake lever is now in Bluetooth mode.
4. When the brake lever is in Bluetooth mode it is visible at the nRF Toolbox App as "Brake Lever DFU".
5. To deactivate Bluetooth mode, push the lever once.

THUMB BRAKE

1. Turn off the brake unit.
2. Push the lever all the way in.
3. When the LED display turns red, release the lever. The thumb brake is now in Bluetooth mode.
4. When the thumb brake is in Bluetooth mode it is visible at the nRF Toolbox App as "Thumb Brake DFU".
5. To deactivate Bluetooth mode, push the lever once.

HAND CONTROL

1. Open the battery latch by twisting it. Take the battery out and wait 5 seconds.
2. Set the battery in and lock the latch **without touching any buttons**.
3. Push and hold simultaneously the BRAKE and PARK button until a flashing green and a red light occurs. Then release the buttons.
4. When the hand control is in Bluetooth mode it is visible at the nRF Toolbox App as “Hand Control DFU”.



LED lights on both buttons

Twist counterclockwise

Take out the battery and wait 5 seconds

BATTERY LIFE

The battery is an exhaustible item. The battery will gradually lose its capacity to charging after repeated use. If the battery duration per charge becomes very short, it has probably reached the end of the battery lifetime, and you will need to send the product for service. Contact your dealer for more information.

The life of the battery will vary depending on factors such as the storage method, the usage conditions, the surrounding environment, and the characteristics of the individual battery pack.

USED BATTERIES

Lithium-ion batteries are recyclable, valuable resources. Please consult the place of purchase or distributor to dispose the SmartBrake product.

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TOOLS TO BE USED

TOOLS AND CONSUMABLES

No special tools are necessary for installing the SmartBrake kit, the list below gives an overview of the required equipment:

- TORX driver T25 (included in the Magura kit)
- Hex Allen key 3mm
- Cable ties
- Mounting hardware, e.g. M5 screw with locknut (the required hardware will depend on the vehicles mounting options)

Tools for disassembly of existing brake system will come in addition to this list if applicable.

INSTALLATION/REMOVAL

INTRODUCTION

Congratulations on buying your very own SmartBrake kit! Assembling the product on your vehicle is not more complicated than installing an ordinary brake system, and this document will guide you through proper installation.

Please read this document carefully before commencing the installation of the product. The intended reader of this instruction is a trained technician with traditional tools as found in a bikeshop. Required tools are listed in section TOOLS.

WARNING

Failure to observe and adhere to the instruction in this document can lead to serious or fatal accidents.

Braking characteristics of your vehicle may change after installation, familiarize yourself with the vehicle carefully.

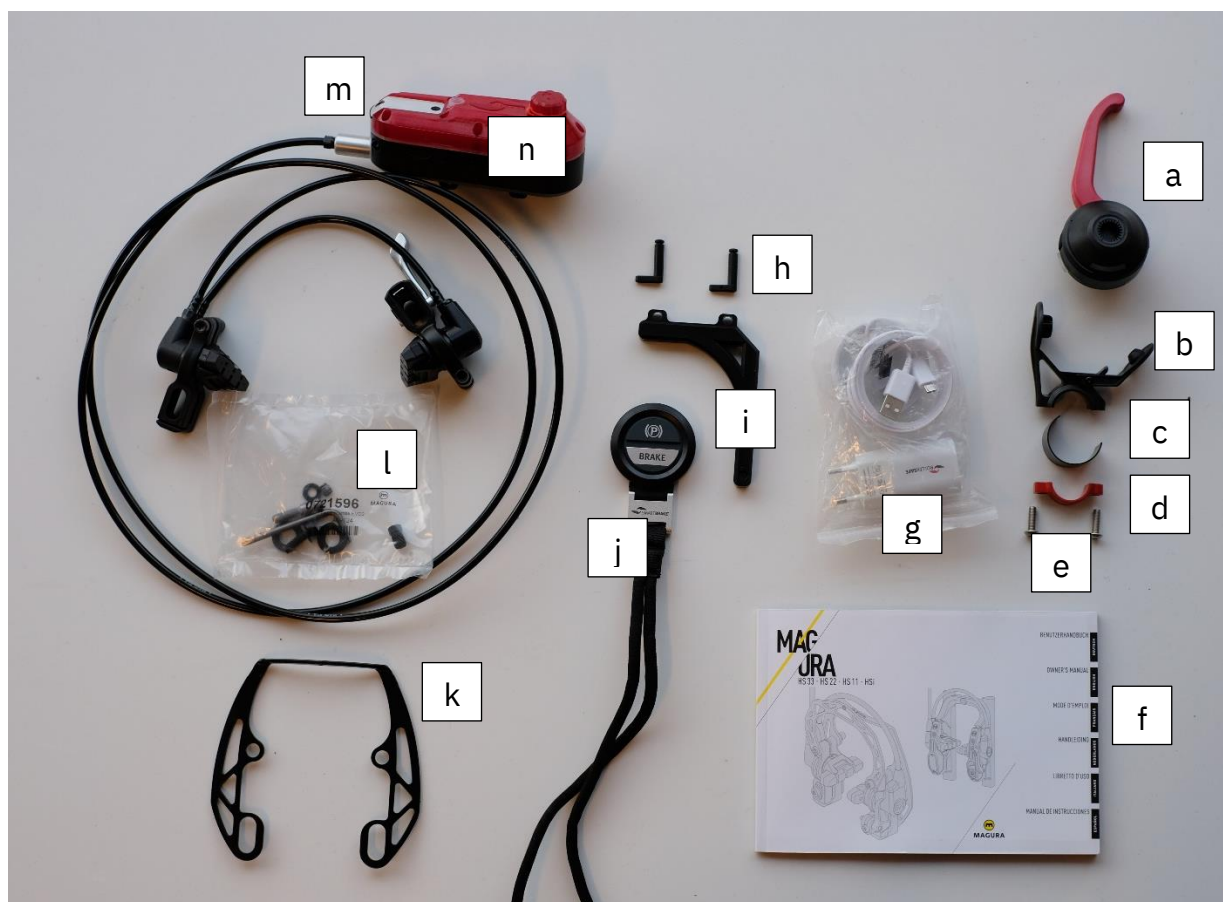
NOTICE

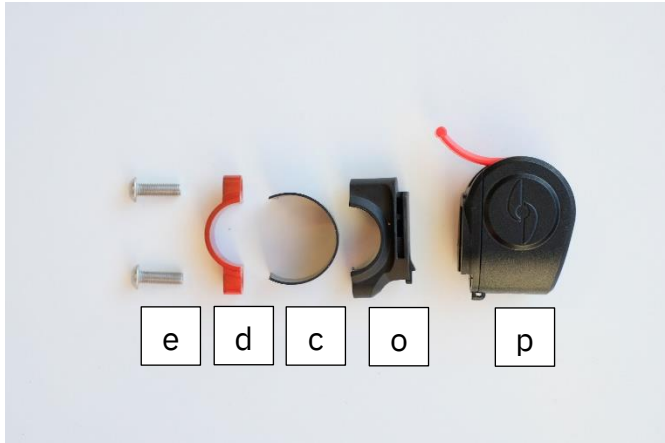
This document specifies the installation of a 1x2 kit which includes a SmartBrake unit with a caliper for rim brakes, and two SmartBrake remotes; a brake lever or a thumb brake, and a companion/parental remote. Other configurations of the product are possible and may require different installation steps. Consult the calipers manufacture website to learn how to install your caliper.

Illustrations and pictures may differ slightly from your SmartBrake product. Double check that the SmartBrake kit has the same configuration as this document specifies.

OVERVIEW OF PARTS IN KIT

The kit might be different depending on if the brake lever, thumb brake, hand control, number of brake units and if rim or disc brake is specified in the order. Below is an overview of all the possible parts that can be included in a kit.





- a. Brake lever
- b. Lever bracket
- c. Elastomer strip
- d. Lever clamp
- e. Lever mounting screws
- f. Magura Owner's Manual
- g. Charger
- h. Lock pins
- i. Mounting bracket
- j. Companion/Parental control
- k. Magura hardware
- l. Magura fasteners
- m. SmartBrake
- n. (SmartBrake unit, part of SmartBrake)
- o. Thumb brake bracket
- p. Thumb brake
- q. Magura MT2
- r. Tektro auriga twin Left
- s. Tektro auriga twin Right



A disclaimer and user manual are also included in the kit.

SAFETY



Use eye protection under the whole installation. Installation is to be done by trained technicians.



Use hand protection when working with mineral oil. Installation is to be done by trained technicians.

NOTICE

Recommendation on personal protection equipment (PPE) is based on the described installation in this document. Use PPE according to local regulations, if other hazardous operations are required then it is the technician's responsibility to utilize the required PPE.

INSTALLATION

INSTALLATION OF THE BRAKE CALIPER

In the SmartBrake kit, the brake caliper is a Magura HS11. Mounting the caliper must be done in accordance with Magura's instructions. See the attachments or the booklet delivered with the kit.

BEST PRACTICES FOR MOUNTING SMARTBRAKE UNIT

Installation of the SmartBrake brake system varies from vehicle to vehicle, and it is therefore not possible to give a specific instruction that fits all applications. Some best practices and things to be aware of are therefore provided as a guiding reference.

WARNING

Installations that result in an inability of the SmartBrake kit to function may lead to serious or fatal injuries.

Ensure that the SmartBrake unit never is in risk of:

- Colliding with the ground while the vehicle is in use
 - Colliding with parts of the vehicle, e.g. bike chain, wheels
 - Obstructing the user while using, entering, or exiting the vehicle
 - Confusing other road users or vehicles by having the red brake light facing the front of the vehicle
 - Damaging the hydraulic hose by excessive bending during and after installation
 - Falling onto the ground or by other means collide during installation
-

The brake unit is not sensitive to orientation, so a horizontal or vertical installation can be freely chosen based on the available mounting options.

Keep in mind that the charging port must be easily accessible for the user after installation.

Routing of the hydraulic hose must be done in a secure fashion, recommended maximum distance between fixture points is 150mm.

NOTICE

Use cable ties of good quality when fixing the hydraulic hose. Ensure that they are made of a water and UV-radiation tolerant material.

Fixing the SmartBrake unit to the vehicle is to be done with the provided mounting bracket and locking pins. The locking pins have an interference fit with the bracket and unit is held in place with friction. Ensure that the locking pins are fully engaged with the bracket as shown in Figure 1. Orientation of the mounting bracket can be done both ways.



Figure 1 Mounting bracket fixed to the SmartBrake unit properly with the locking pins.

Installation of the bracket to the vehicle is to be done by bolting it to a rigid part of the vehicle. Use mounting hardware that is rated for outdoor use and vibrations.

⚠WARNING

Using mounting hardware not rated for outdoor use can lead to corrosion and premature failure. Using mounting hardware not rated for vibrations will risk the SmartBrake unit loosening.

Modifications to the mounting bracket can lead to a degraded structural integrity. Failure of the mounting bracket can lead to damage or critical failure of the SmartBrake unit.

MOUNTING AND ADJUSTING THE BRAKE LEVER

Always use the supplied elastomer strip between the tube and the clamp for the brake lever holder. Ensure that the brake lever is mounted so that the clamp opens upwards, as shown in Figure 2.

NOTICE

Torque the supplied hex-head screw to 0.23Nm, tighten with care as over-torquing can damage the brake lever holder.

Users might have different grip reaches to operate the brake lever. Adjusting the orientation of the brake lever so that the lever moves closer or further away from the handlebar may be necessary. Simply lift open the clamp as shown in Figure 2 and rotate the brake lever housing.



Figure 2 Correct mounting of the Brake Lever, the bracket is in open position in the figure to the right, this must be closed before delivery.

⚠ WARNING

Make sure the clamp is properly closed. Deviation may cause the remote to drop off which may cause serious or fatal injuries to the user.

When the brake lever is sat in a new position, the top brake force may be reduced due to software settings. After five full brake cycles from no brake to full brake with the Brake Unit responding, the software calibrates the new lever position to a gain full brake force. This is signaled by a blue light at the brake lever. If you do not see a blue light, place the lever further away from the handlebar to get more movement in the lever and do five full brake cycles. If you do not gain full brake force, contact your SmartBrake dealer, or visit www.mysmartbrake.com for support.

MOUNTING THE THUMB BRAKE

Always use the supplied elastomer strip between the tube and the clamp for the thumb brake bracket.

NOTICE

Torque the supplied hex-head screw to 0.23Nm, tighten with care as over-torquing can damage the thumb brake bracket.



Figure 3 Example of a mounted thumb brake on a handlebar.

The thumb brake slides onto the thumb brake bracket.

⚠ WARNING

Make sure that you hear an audible “click” sound when mounting the thumb brake on the thumb brake bracket. There is a snap connection that holds the thumb brake in place.

CHARGE BRAKE UNIT AND LEVER

Give the SmartBrake unit and brake lever a charge cycle before shipping the product to the user. The battery in the SmartBrake unit is not stored with a full depth of charge. Full charge is approximately reached after 3.5 hours for the brake unit and 2.5 hours for the brake lever.

⚠ WARNING

Make always sure that the screw cap on the SmartBrake unit is tightened, and the silicon lid on the break lever is properly sealed after charging. Poor sealing may cause damage to electronics parts which may cause unforeseen deviations in function which can lead to serious or fatal injuries to the user.



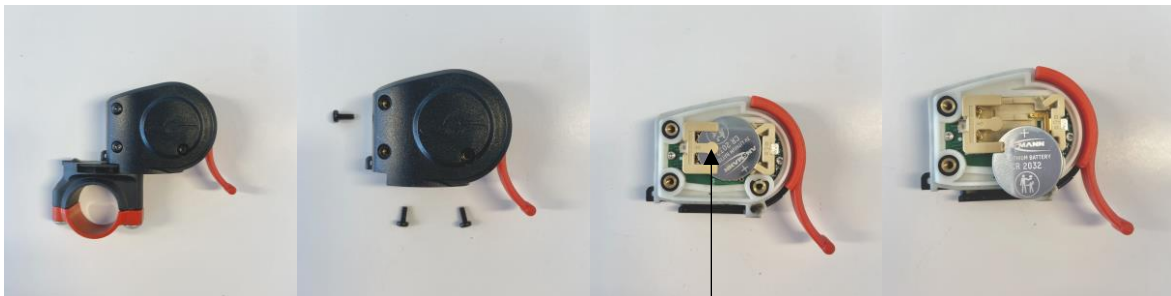
Illustrations above shows the charging ports in their open position – ensure that these are properly closed.

CHANGE BATTERY AT THUMB BRAKE/HAND CONTROL

THUMB BRAKE

The thumb brake uses a CR2032 battery and cannot be charged. Under is a guide to change the battery.

1. Remove the thumb brake from the bracket
2. Use a Torx8 screwdriver to remove the three screws
3. Carefully remove the CR2032 battery by pushing down the pin with the arrow.
4. Add a new CR2032 battery and assembly the thumb brake.



3. Push down to eject the battery.

HAND CONTROL

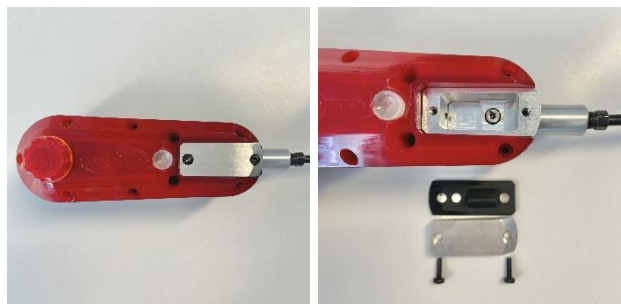
The hand control uses a CR2032 battery and cannot be charged. Under is a guide to change the battery.

1. Turn the hand control around.
2. Open the lid with a coin or an object that fits the trace.
3. Turn counterclockwise until the latch pops up.
4. Add a new Lithium 3V CR2032 battery and screw the lid in place.



BLEEDING AND MOUNT A CALIPER TO THE BRAKE UNIT

To bleed the brake unit, start by turning off the brake unit. Then unscrew the two Torx8 screws on the lid. Inside the aluminum container is a bleeding screw. Use a Torx10 screwdriver to open.



NOTICE

The container is not a reservoir.

⚠ WARNING

When tightening the bleed nut, do not use force. The O-ring will get destroyed and this will cause an oil leak.

Illustration of the cable connection point to the brake unit.



IF THE HYDRAULIC HOSE IS NOT THE CORRECT LENGTH

Contact our support at:
(+47) 64959444
post@mysmartbrake.com

⚠ WARNING

Attempting to extend or shorten the hydraulic hose and bleeding the system is not allowed. This requires specialized personnel. Errors introduced from attempting this can cause failure of the SmartBrake system and serious or fatal injuries to the user.

START AND TEST

Your SmartBrake kit is delivered fully bled and synchronized with the remotes. To test the kit; start by pushing the activation button on the brake unit. At the start-up, the system will go in safety brake until the administrator control is activated and is within signal range. Activate a control by triggering the button or lever.

If the brake unit is still going into safety brake you will need to detect the error by reading the User Manual.

ADMINISTRATOR REMOTE

When you have two remotes set up, it is important to distinguish between the one that is intended as fixed to the bicycle and the one that is handheld or should be on an accompanying bicycle. The control to be used with distance to the bike is the administrator, and it is only this remote that wakes up the brake system at start-up.

CONNECTIVITY GUIDE

CONNECT A BRAKE UNIT TO ONE OF MORE BRAKE REMOTES

1. Turn off the administrator brake unit but keep holding the button until the braking light lights up, then release the button. The constant brake light signal indicates that the unit is ready to start synchronizing.
2. Place the brake remote to be used close to the brake unit.
3. Push the lever/button on the control. When the remote and the brake unit are connected the brake light will disappear.

Start up the system by pushing the connection button on the brake unit once. To connect multiple brake remotes, repeat the process. The described method applies for alle remotes.

CONNECT TWO OR MORE BRAKE UNITS WITH EACH OTHERS

1. To obtain the strongest signals, choose the brake unit that has less risk of signal interference* to be administrator. Turn off the brake unit but keep holding the button until the braking light lights up, then release the button. The constant brake light signal indicates that the unit is ready to start synchronizing.

**Signal interference can be a bicycle battery or something magnetic.*

2. On the other brake unit. Turn off the brake unit but keep holding the button until the braking light lights up for a second time, then release. The units automatically connect with each other's. When the brake units are connected both brake lights will disappear.

Start up the system by pushing the connection button once on both units.

To connect multiple brake units, repeat the process.

NOTICE

Administrator Brake Unit is the first unit to be connected with a remote or another unit.

Assistant Brake Unit is all the units connected to the administrator unit.

DISCONNECT A REMOTE

You can easily disconnect a remote by upload an assistant software to the remote. Then you can remove the battery or letting the remote be out of range. It is not possible to disconnect it as a function.

Read the chapter: HOW TO UPLOAD A FIRMWARE AND WHICH ONE TO USE WHEN?, to learn how to upload a new firmware to a remote or unit.

NOTICE

For SmartBrake to work there must always be one, and only one remote with an administrator software. All others shall have assistant software.

DISCONNECT AN ASSISTANT UNIT

To make an assistant unit to work as an administrator you will need to do a system reboot.

1. Turn off the assistant brake unit but keep holding the button until the braking light lights up, this process takes about 25 seconds. Then release. This unit is now disconnected from the administrator unit and can now be used as an administrator.

START AND PREPARATIONS

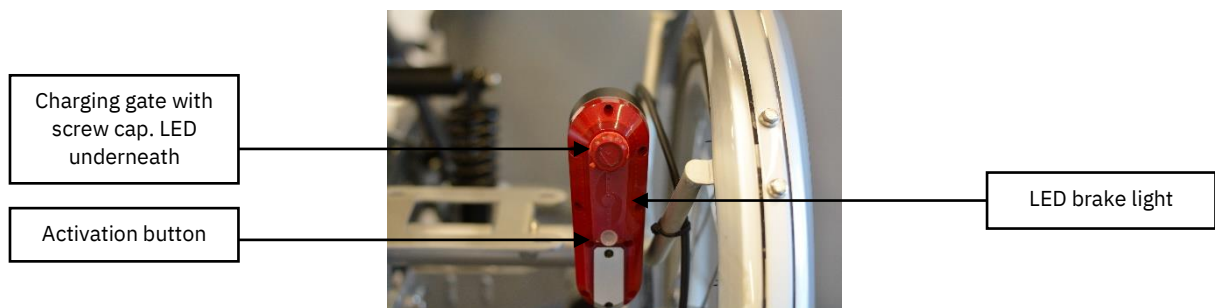
Your SmartBrake consists of a brake unit with a brake remote. If you have two brake units, you must turn on/off and charge both units separately. The brake units are synchronized and will perform as one during use. For two brake remotes, read the chapter: Extra brake remote.

TURN ON YOUR SMART BRAKE SYSTEM

Step 1. Press one time at the activation button on the brake unit to turn on the system. The system will now perform a calibration test.

Calibration = System checks the brake pads' condition, to optimize lead-time in hydraulic pump. The system performs a fully automatic brake force test from minimum to maximum.

Step 2. Awake the administrator brake remote from sleep mode by pressing the red lever/brake button once. The safety brake will now disengage and the vehicle will roll freely, if the lever/button is not held in. When the brake lever/button is activated, the brake will also be activated, and you will see the brake light as long as the lever/button is held in.



SMART BRAKE Unit

TURN OFF YOUR SMART BRAKE SYSTEM

SmartBrake is switched off by holding down the activation button until the motor shuts down and the brake light flash twice. If you do not remember to turn off your SmartBrake it is not a problem. The brake system will deactivate automatically after 30 minutes of inactivity, in a locked position. When you return to the vehicle, turn on the system again as described above.

BRAKE LEVER IN USE

Active brake by pushing the lever. Activate the parking brake by sliding the lever away from you over the first or second notch.

You can adjust the grip size of the lever by opening the mounting bracket by pulling up the upper part slightly, lift the lever, place the lever at the desired distance from the handlebar and gently push the upper part of the bracket again. By placing the lever in the desired position from the handle, the technology will automatically adjust the braking force in relation to how much movement the lever makes, after five full braking sequences. A blue light will occur in the brake lever when this function is activated.



Place the control in the bracket in the desired position. To remove the lever when charging, reverse the process

LED on both sides

NOTE: Safety brake will be activated if the brake lever runs out of power, or the brake lever is activated as an administrator and goes outside signal range. When the control is within range again, it will automatically turn off the safety brake.

HAND CONTROL IN USE

Activate brake by holding down the "BRAKE" button. Parking brake is activated by pressing (P) once. Loosen parking brakes by pressing «Brake» once.

NOTE: Safety brake will be activated if the hand control runs out of power, or the hand control is activated as an administrator and goes outside signal range. When the control is within range again, it will automatically turn off the safety brake.



Seperate buttons for brake and parking brake

Neck strap

LED on both buttons

THUMB BRAKE IN USE

To activate parking brake: Perform four full braking cycles within a five second interval. To deactivate the brake, push the lever once.

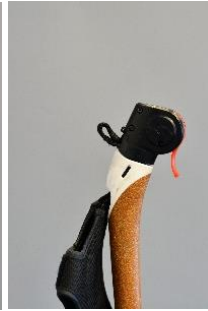
NOTE: Safety brake will be activated if the thumb brake runs out of power, or the thumb brake is activated as an administrator and goes outside signal range. When the control is within range again, it will automatically turn off the safety brake.



Fits with a brake lever



Thumb brake



Require seperate bracket to mount on a ski pole. Contact dealer.



LED at the back

EXTRA BRAKE REMOTE

TURN ON YOUR SMART BRAKE SYSTEM

When you have two remotes set up, it is important to distinguish between the one that is intended as fixed to the bicycle and the one that is handheld or should be on an accompanying bicycle. The remote to be used with distance to the bike is the administrator, and it is only this remote that wakes up the brake system at start-up.

DISTANCE CONTROL

Only the administrator control releases the safety brake if the brake control is out of signal range. In other words, the safety brake will be activated if the administrator control is not near the vehicle. It is therefore important that this control always is included when the bicycle is to be used alone or with others.

If you wish to change which remote who is administrator or assistant, read the chapter: HOW TO UPLOAD A FIRMWARE AND WHICH ONE TO USE WHEN?.

BATTERY SAFETY

Both the administrator brake unit/control and assistant brake unit/remote activates the safety brakes if one of them runs out of power.

SAFETY BRAKE

SmartBrake has a built-in safety brake system that's automatically activates the brakes with in a second in case the battery level on a remote/brake unit is critically low or signal failure occur.

Critical low battery: Battery capacity below 15%.

Signal failure: The signal between the brake remote and the brake unit is broken, either due to distance or interference. The range is about 30 meters.



Brake unit without brake light

Brake unit with brake light

UNLOCK THE WHEELS AFTER A SAFETY BRAKE

If the problem that activated the safety brake cannot be solved on the spot, the brake unit must be turned off. When the brake unit is switched off, the pressure on the brakes is released so that the wheels roll freely.

Please note that SmartBrake must be fixed in these cases before further use. In the meantime, use the vehicle's secondary braking system.

NOTICE

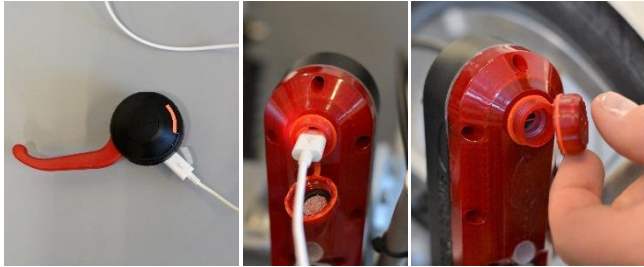
When a remote or brake unit activates the safety brakes due to low battery/signal failure, even in a setup with multiple brake units/remotes, you will need to turn off the brake unit(s) to release the safety brakes. When activating the brake unit, the safety brakes will be reactivated until the brake unit/remote is charged or the battery is replaced with a fully charged one, or within signal distance again.

⚠ WARNING

Your vehicle will now have only one functional braking system. Riding the vehicle with only one functional braking system is strongly discouraged.

CHARGING COMPONENTS

It is recommended to charge approximately after every fourth trip to make sure you always have enough battery. When charging, use the charger that came with the product on both the brake unit and the brake lever. A fully charged battery, when using a charger, is signaled by a green light after about 3 hours.



Remove the remote from the bracket and open the lid. Use the USB-charger

Turn counterclockwise to open the charging cover. Use the USB-charger

CHANGING BATTERY

It is important to create good charging routines! Both remotes must be recharged / replaced battery independently of each other.

MAINTENANCE

SmartBrake requires maintenance charging to avoid that the battery is damaged if the products are left unused for long periods. If the battery is damaged, the battery will no longer be able to be charged.

NOTICE

Read more important maintenance in the chapter: BE SURE TO ALSO INFORM USERS OF THE FOLLOWING.

QUICK TROUBLESHOOTING

BRAKE UNIT		
Trouble	Possible Cause	Remedy
Flashing brake light every seven seconds.	Under 25% battery capacity.	Charge whenever possible.
Brakes on and brake unit does not light.	Fail-Safe activated because of drained battery at brake unit.	Turn off the brake unit by holding down the activation button until the motor shuts down and the brake light flash twice. This will open the brakes. The remotes will not work as the system it turned off. Charge for 3.5 hours.
Brakes on and brake unit flash green at the USB light.	Fail-Safe activated because of a brake remote: A remote is out of range: The remote flash green. A remote has drained battery: The remote does not light when activated.	Turn off the brake unit by holding down the activation button until the motor shuts down and the brake light flash twice. This will open the brakes. The remotes will not work as the system it turned off. Charge the remote for 2.5 hours.
Activation button at the brake unit does not work.	The button might be stuck. When stuck there is no “click” sound when pushing it.	Try to push the button from different directions to see if it loosens.
The USB light does not light up when charging.	1. Defective charger, battery, or circuit board. 2. The USB is not properly attached.	1. Try another charger and/or charging cable. If it does not work, try a reboot*. If it still not works, send to service.
Less brake force than usual.	1. Check cleanness and maintains of vehicle and caliper / brake pads. 2. Oil leak or air in the hose.	1. Clean the brake pads and disc / rim. 2. In case of suspicion contact your dealer or SmartBrake.

***A reboot** erase errors and changes an assistant back to an administrator. There is two ways to do a reboot.

For administrator unit: Turn off the administrator brake unit but keep holding the button until the braking light lights up for a third time, then release. When the brake light turns off after releasing the button the reboot is done. If you hold the button past the third brake light signal will the unit turn off without doing a reboot.

For an assistant unit: Turn off the assistant brake unit but keep holding the button until the braking light lights up, this process takes about 25 seconds. Then release. This unit is now disconnected from the administrator unit and can be set to work as an administrator.

BRAKE LEVER		
Trouble	Possible Cause	Remedy
Red flash every seven second.	Battery level is low.	Charge whenever possible.
No light when triggered.	The battery is out of power. If brake unit is activated will Fail-Safe activate because of drained battery at the brake lever.	Charge now. Turn off the brake unit by holding down the activation button until the motor shuts down and the brake light flash twice. This will open the brakes.
Green flash while pushing the lever.	Fail-Safe activated because of the remote is out of range, or the brake unit is off.	Turn on the brake unit or make sure the brake lever is with in signal distance.
Red constant light signal.	The brake lever is in Bootloader mode.	Bootloader enables you to change firmware from a mobile device. Push the lever to deactivate Bootloader mode.
Everything is functional, but there are no lightning signals.	Possible defect lightning source	Send to service
The remote light does not light up when charging.	1. Defective charger, battery, or circuit board. 2. The USB is not properly attached.	1. Try another charger. If it does not work – Send to service.

HAND CONTROL		
Trouble	Possible Cause	Remedy
Red flash every seven second.	Battery level is low.	Change battery CR2032 whenever possible.
There are no functions when activating the button even though the brake unit is powered on.	Drained battery.	Change battery CR2032.
Green flash while pushing the “Brake” button, but no reaction at the brake unit even though the brake unit is powered on.	Lost contact with the brake unit.	1. Make sure the remote is within signal range. 2. Set the administrator brake unit in synchronization modus and connect the remote.

THUMB BRAKE		
Trouble	Possible Cause	Remedy
Red flash every seven second.	Battery level is low.	Change battery CR2032 whenever possible.
No light when triggered.	The battery is out of power. If brake unit is activated will Fail-Safe activate because of drained battery at the brake lever.	Change battery CR2032. The battery is under the cover fasten with three T8 screws. Turn off the brake unit by holding down the activation button until the motor shuts down and the brake light flash twice. This will open the brakes.
Green flash while pushing the lever.	Fail-Safe activated because of the remote is out of range, or the brake unit is off.	Turn on the brake unit or make sure the thumb brake is with in signal distance.
Red constant light signal.	The brake lever is in Bootloader mode.	Bootloader enables you to change firmware from a mobile device. Push the lever to deactivate Bootloader mode.