(English)

UM-0MX0B-003

User's Manual

Dual Control Lever (Di2) for Hydraulic Disc Brake Type (SHIMANO Hydraulic Mineral Oil)

https://si.shimano.com

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IMPORTANT NOTICE

- Contact the place of purchase or a distributor for information on installation, adjustment, and replacement of the products which are not found in the user's manual. A dealer's manual for professional bicycle mechanics is available on our website (https://si.shimano.com).
- 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 user's manual thoroughly before use, follow it for correct use, and store it so that it can be referenced at any time.

 **DANGER**	Failure to follow the instructions will result in death or serious injury.
 **WARNING**	Failure to follow the instructions could result in death or serious injury.
 **CAUTION**	Failure to follow the instructions could cause personal injury or physical damage to equipment and surroundings.

Important safety information

⚠ WARNING

- **INGESTION HAZARD**: This product contains a button cell or coin battery.
- **DEATH** or serious injury can occur if ingested.
- A swallowed button cell or coin battery can cause **Internal Chemical Burns** in as little as **2 hours**.
- **KEEP** new and used batteries **OUT OF REACH of CHILDREN**
- **Seek immediate medical attention** if a battery is suspected to be swallowed or inserted inside any part of the body.



- Remove and immediately recycle or dispose of used batteries according to local regulations and keep away from children. Do NOT dispose of batteries in household trash or incinerate.
- Even used batteries may cause severe injury or death.
- Call a local poison control center for treatment information.
- The compatible battery type：CR1632
- The nominal battery voltage：3 V
- Non-rechargeable batteries are not to be recharged.
- Do not force discharge, recharge, disassemble, heat above 85°C or incinerate. Doing so may result in injury due to venting, leakage or explosion resulting in chemical burns.
- Ensure the batteries are installed correctly according to polarity (+ and -).
- Do not mix old and new batteries, different brands or types of batteries, such as alkaline, carbon-zinc, or rechargeable batteries.
- Remove and immediately recycle or dispose of batteries from equipment not used for an extended period of time according to local regulations.
- Always completely secure the battery compartment. If the battery compartment does not close securely, stop using the product, remove the batteries, and keep them away from children.

⚠ WARNING

- Because each bicycle may handle slightly differently depending on the model, be sure to learn the proper braking technique (including brake lever pressure and bicycle control characteristics) and operation of your bicycle. Improper use of your bicycle's brake system may result in a loss of control, which could lead to serious injury due to a fall or collision.
- Do not disassemble or modify the product. This may cause the product to not operate correctly, and you may suddenly fall and be seriously injured.
- Use only the battery specified. Using an incorrect battery may cause the battery to burst or leak fluid, resulting in fire, injury, or defacement in the surrounding area.
- Do not use the battery outside its operating temperature ranges. If a battery is used or stored in temperatures which are outside these ranges, fire, injury or problems with operation may occur.
- Do not throw or subject this product to strong shocks. If this is not observed, bursting, overheating or problems with operation may occur.
- Do not let grease adhere to the metal terminals. A conduction failure may result.

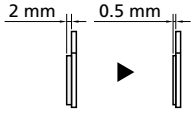
- Do not use the battery if leakages, discoloration, deformation or any other abnormalities occur. If this is not observed, bursting, overheating or problems with operation may occur.
- If any fluid leaked from the battery gets on your skin or clothes, wash it off immediately with clean water. The leaked fluid may damage your skin.
- Coin batteries are hazardous and must be kept away from children. Never put coin batteries in mouth or in any part of the body. Severe or fatal injuries can occur within 2 hours if swallowed or placed inside the body. If this occurs or is suspected, seek medical attention immediately.



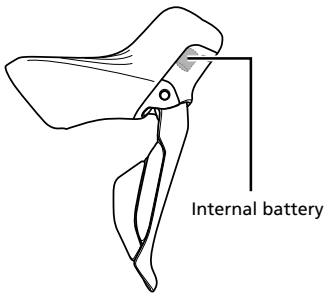
- Do not use this equipment in locations where children are likely to be present. If the included coin batteries are swallowed by mistake, seek medical attention immediately.
- Dispose of the coin batteries according to proper country and/or state disposal regulations. Disposal of this product into fire or a hot oven, or mechanically crushing or cutting it, can result in an explosion of the coin batteries.
- When operating the shift switch, be careful not to allow your fingers to be caught in the derailleur. The powerful motor which drives the electronic gear shifting derailleur will operate without stopping until the shifting position is reached.
- This hydraulic brake system has different control and braking characteristics from those of the rim brake type, demonstrating relatively high braking force at the beginning of braking (higher than the rim brake type); familiarize yourself sufficiently with the braking characteristics before using it. If you ride the bicycle without becoming sufficiently familiar with the braking characteristics, braking may cause you to fall off the bicycle, potentially causing serious injury or a fatal accident.
- Riders must become accustomed to the higher performance of this brake before riding the bicycle. Using larger diameter disc brake rotors provides a higher braking force than smaller diameter disc brake rotors. If you ride the bicycle without becoming sufficiently familiar with the braking characteristics, braking may cause you to fall off the bicycle, potentially causing serious injury or a fatal accident.
- Keep your fingers away from rotating disc brake rotors. The disc brake rotor is sharp enough to inflict severe injury to your fingers if caught within the openings of moving rotor.



- Do not touch the calipers or disc brake rotor while riding or immediately after dismounting from the bicycle. The calipers and disc brake rotor will become hot when the brakes are operated, so you may get burned if you touch them.
- Do not allow any oil or grease to get onto the disc brake rotor and brake pads. Riding the bicycle with oil or grease on the disc brake rotor and brake pads may prevent the brakes from operating and result in serious injury due to a fall or collision.
- Check the thickness of the brake pads and do not use them if they have a thickness of 0.5 mm or less. Doing so may prevent the brakes from operating and result in serious injury due to a fall or collision.



- Do not use the disc brake rotor if it is cracked or deformed. The disc brake rotor may break, and result in serious injury due to a fall.
- Do not use the disc brake rotor if its thickness is 1.5 mm or less. Also do not use it if the aluminum surface becomes visible. The disc brake rotor may break, and result in serious injury due to a fall.
- Do not continuously apply the brakes. Doing so may cause a sudden increase in the brake lever stroke, preventing the brakes from operating and resulting in serious injury due to a fall or collision.
- Do not use the brakes with fluid leaking. Doing so may prevent the brakes from operating and result in serious injury due to a fall or collision.
- Do not apply the front brake too strongly. If you do so, the front wheel may lock and the bicycle may fall forward, and serious injury may result.
- Because the required braking distance will be longer during wet weather, reduce your speed and apply the brakes early and gently. You may fall or collide and be seriously injured.
- A wet road surface may cause tires to lose traction; therefore, to avoid this, reduce your speed and apply the brakes early and gently. If the tires lose traction, you may fall and be seriously injured.
- Do not leave this product in an extremely high temperature surrounding environment such as in a closed vehicle on a hot day, or near a heater. That may result in an explosion of internal battery or the leakage of flammable liquid or gas from it.
- Do not subject this product to extremely low air pressure. That may result in an explosion of internal battery or the leakage of flammable liquid or gas from it. Transporting this product by air is not a problem.
- Observe all federal, state and local environmental regulations when disposing of this product, because it has an internal battery in addition to its coin battery. Disposal of this product into fire or a hot oven, or mechanically crushing or cutting of it, can result in an explosion of the internal battery.



- Check the information on the supported models for each oil type, and use the correct oil for the product. Doing otherwise may prevent the brakes from operating and result in serious injury.
- Do not mix SHIMANO hydraulic mineral oil with SHIMANO low viscosity oil. Doing so may prevent the brakes from operating and result in serious injury.

https://si.shimano.com/dm/BROIL

⚠ CAUTION

■ Cautions on SHIMANO hydraulic mineral oil

- If SHIMANO hydraulic mineral oil enters your eyes, flush with fresh water and seek medical assistance immediately. Contact with eyes may result in irritation.
- If SHIMANO hydraulic mineral oil contacts your skin, wash well with soapy water. Contact with skin may cause a rash and discomfort.
- When using SHIMANO hydraulic mineral oil, cover your nose and mouth with a respirator type mask and ensure that the area is well-ventilated. Inhalation of mineral oil mist or vapors may cause nausea.
- If SHIMANO hydraulic mineral oil mist or vapor is inhaled, go immediately to an area with fresh air. Cover up with a blanket. Stay warm and stable and seek professional medical advice.

■ Bed-in period

- Disc brakes have a bed-in period, and the braking force will gradually increase as the bed-in period progresses. Accidents or falls may occur due to losing control of the bicycle, possibly resulting in serious injury. (The same thing will happen when the brake pads or disc brake rotor are replaced.)

Notice

- To prevent noise and ensure the best performance, perform the bed-in procedure after replacing the brake pads or disc brake rotor.
- Be sure to rotate the crank while performing the switch operations related to gear shifting.
- You can use E-TUBE PROJECT to update the software for the hood button. Please contact your place of purchase for details.
- The components are designed to be fully waterproofed to withstand wet weather riding conditions; however, do not deliberately place them into water.
- Do not clean the bicycle with a high-pressure wash. If water gets into any of the components, operating problems or rusting may result.
- Handle the components carefully, and avoid subjecting them to strong shock.
- Be careful not to get water into the E-TUBE ports and the satellite shifter connection port.
- Do not use the thinners or harsh solvents to clean the products. Such solvents may damage the surface.
- In the case of carbon levers, wash them with a soft cloth using a neutral detergent. Otherwise, the material may be damaged and lose strength.
- Avoid leaving the carbon levers in places where high temperatures are present. Also keep them well away from fire.
- When the bicycle wheel has been removed, it is recommended that pad spacers are installed. Do not depress the brake lever while the wheel is removed. If the brake lever is depressed without the pad spacers installed, the pistons will protrude further than normal. If that happens, consult a place of purchase.
- Use soapy water and a dry cloth when cleaning and carrying out maintenance of the brake system. Do not use commercially available brake cleaners or silencing agents. Such substances can cause damage to parts such as seals.
- Contact the place of purchase for updates of the component software. The most up-to-date information is available on the SHIMANO website.
- Also read the manuals for other connected components together with the manual for the brakes.
- Be sure to attach dummy plugs to any unused E-TUBE ports and the satellite shifter connection port. If water gets into any of the components, operating problems or rusting may result.
- The electric wire has small waterproof connectors, so do not repeatedly connect and disconnect it too often. Doing so may impair the waterproofing.
- 2.4 GHz digital wireless

  This product adopts digital communication technologies in the 2.4 GHz frequency, which are used for wireless LAN, etc. It may receive interference in the following locations or environments that prevent wireless communication from being performed correctly:

  - Near a device such as a television, computer, radio, motor, or microwave oven, or inside an automobile or railway car
  - Near a railway crossing or railway track, television transmitting station, or radar base, etc.
  - When using the device in combination with another cordless device or some lights

- Coin batteries
  - Insert the battery with the correct +/- orientation.
  - Remove the battery if you do not use it for a long period.
  - When the battery is depleted, remove it immediately.
- Store this product or the bicycle with this product installed in a cool indoor location away from direct sunlight and rain (approx. 10 - 20°C). If the storage temperature is too low or too high, the performance of the coin batteries is reduced, and their usable time will be shorter. When using after a long period of non-use, be sure to replace the coin batteries with new ones.
- Products are not guaranteed against natural wear and deterioration from normal use and aging.
- For maximum performance we highly recommend SHIMANO lubricants and maintenance products.

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.



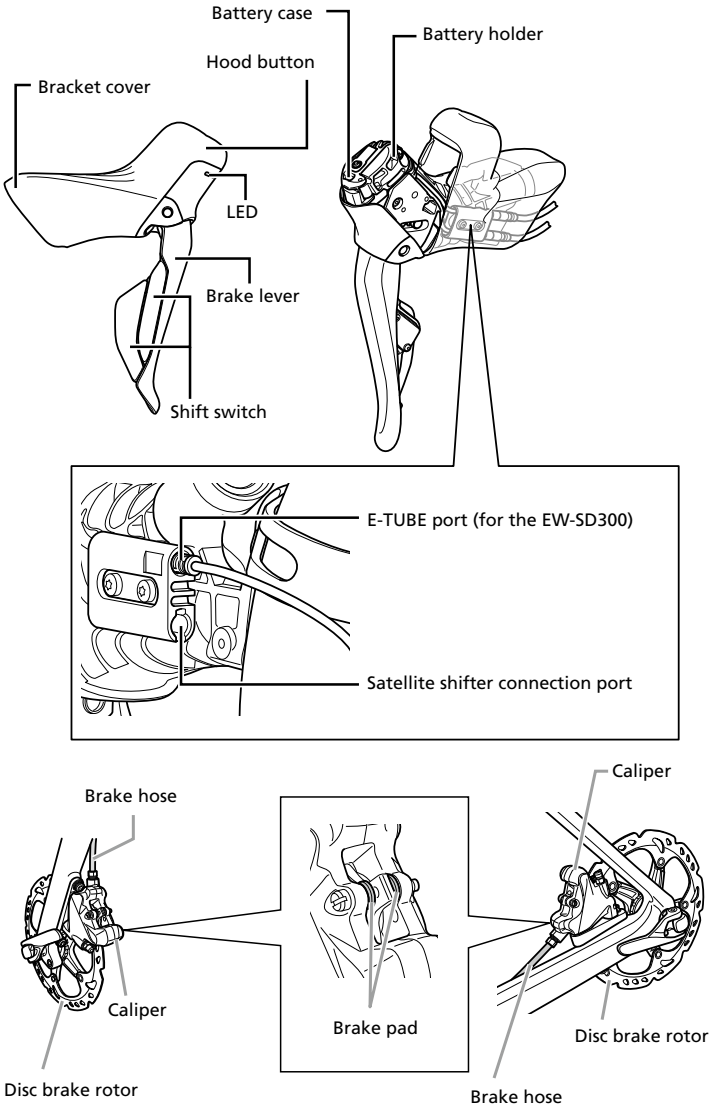
This symbol on your product, literature, or packaging reminds you that this product must be taken to separate collection at the end of its working life. Do not dispose of this product as unsorted municipal waste but instead take it for recycling. By ensuring the product is disposed correctly, you will help to prevent potential negative consequences for the environment and human health. For info on your nearest recycling point, check with your local waste authority.

Regular inspections before riding the bicycle

Before riding the bicycle, check the following items. If any problems are found, consult your place of purchase or a distributor.

- Are there any signs of brake oil leakage?
- Do the front and rear brakes work correctly?
- Do the pads have a thickness of 0.5 mm or more?
- Is the disc brake rotor cracked or deformed?
- Does gear shifting occur when the shift switches are operated?
- Are the levers securely installed to the handlebar?
- Are there signs of cracks or peeling on the levers?
- Do any abnormal noises occur during operation?
- Is there sufficient charge remaining in the battery?

Names of parts



* Depending on specifications, some models may lack some functions. In models with a hood button, the hood button may be located in different positions depending on the model. Pull back the bracket cover and check the location of the hood button.

* The number of connection ports in the E-TUBE port differs depending on the model.

How to operate

Gear shifting operation

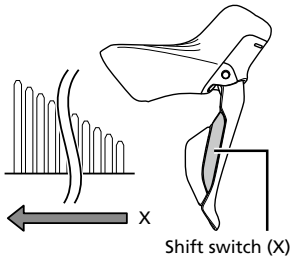
Be sure to rotate the crank while performing all switch operations related to gear shifting.

Hood button (default setting)

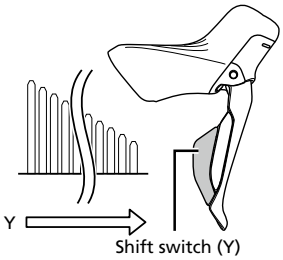
The hood button sends signals via the rear derailleur to compatible products. The operation and functions differ depending on the compatible product. Refer to the manual for the compatible product.

Rear shift switch operation (default setting)

<Shift switch (X)>
Shifts to a larger sprocket.

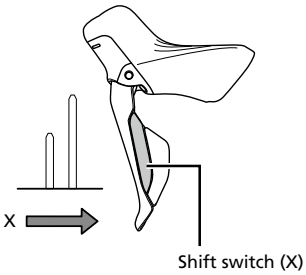


<Shift switch (Y)>
Shifts to a smaller sprocket.



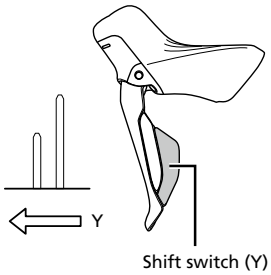
Front shift switch operation (default setting)

<Shift switch (X)>
Shifts to a larger chainring.



Shift switch (X)

<Shift switch (Y)>
Shifts to a smaller chainring.

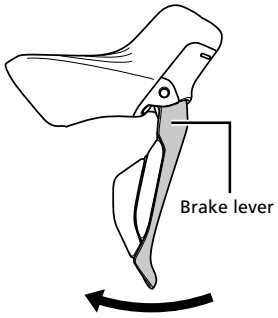


Shift switch (Y)

- If the chain falls off the crank to the inside, press and hold the shift switch (X) for 1 second or more. This will cause the front derailleur to move to the outermost position and remain there for 10 seconds in order to remount the chain.
- Actual behavior may differ depending on the connected components and software version.
- The settings for each switch can be changed as follows. For details about changing settings, contact the place of purchase.
  - Reverse the shifting up and shifting down functions for shift switches (X) and (Y)
  - Reverse the rear and front shift switches
  - Multi-shift mode setting
  - Configure the hood button as a shift switch
- If no switch operations are performed for 30 minutes, gear shifting will not be performed with the first switch operation after that. Gear shifting will be performed from the second switch operation.

Operating the brakes

This product has reach adjustment and free stroke adjustment functions. For details about making these adjustments, contact the place of purchase.



Selecting / confirming the synchronized shift and manual shift

Double click the shift switch assigned to the mode switch function to switch the shift mode selection. The LED on the rear derailleur changes as indicated in the figure each time the shift mode switches.

Manual shift		
	Manual shift (M)	Solid blue
Synchronized shift 1		
	Shift mode 1 (S1)	Flashing blue (twice)
Synchronized shift 2		
	Shift mode 2 (S2)	Flashing blue (3 times)

Switching to the adjustment mode

Press and hold the shift switch assigned to the mode switch function for 2 to 5 seconds to switch the mode.

For the setting procedure, contact your place of purchase or a distributor.

Switch between AUTO SHIFT (auto gear shifting) and manual gear shifting

NOTICE

- If it is difficult to switch to the manual gear shifting, check that [Gear shifting mode] is assigned to the hood button. For details, check the user's manual for E-TUBE PROJECT Cyclist .

Single click the hood button to select the AUTO SHIFT mode and switch to the manual gear shifting. The LED on the rear derailleur changes as indicated in the figure each time the mode switches.

For SHIMANO E-BIKE SYSTEMS with a cycle computer

Action	Hood button / shift switch operation	Current mode	LED	
Switching between AUTO SHIFT and manual gear shifting ([AUTO 1] → [AUTO 2] → Manual → [AUTO 1]…)	Single click the hood button / shift switch	Normal mode	☼	Flashing green [AUTO 1]: Once [AUTO 2]: Twice
			●	Solid green Manual

For other bicycles compatible with AUTO SHIFT

Action	Hood button / shift switch operation	Current mode	LED	
Switching between AUTO SHIFT and manual gear shifting (Selected AUTO SHIFT setting ↔ Manual)	Single click the hood button / shift switch	Normal mode	☼	Flashing green [AUTO 1]: Once [AUTO 2]: Twice [AUTO 3]: 3 times
			●	Solid green Manual

Checking the shift switch battery level

If you hold down two shift switches simultaneously for 0.5 seconds or longer, the LED changes to any of the status shown in the figure depending on the battery level.

11% - 100%		Solid green
1% - 10%		Solid red
0%		Off

About battery replacement

Before replacing the battery

- The included battery is for test purposes. When the battery level becomes low, replace it with a new battery.
- When replacing the battery or opening/closing the battery holder, move to an area well away from sources of water (such as rivers, lakes, the ocean, or ditches).
- Do not perform this task in locations with a lot of water or mud, such as outdoors during rain or car washing facilities. If not observed, problems with operation may occur.
- Do not perform this task in areas with a lot of sand or dust in the air. If not observed, problems with operation may occur.
- Before replacing the battery, wipe the battery holder and battery case to remove water, dirt, etc. If not observed, problems with operation may occur.
- Use your hands or an insulated tool with a blunt tip to perform this task. Using a conductive tool such as pliers may short the terminals of the coin battery and cause a malfunction.
- Take care of the terminals when removing the coin batteries in order to prevent damage to the coin batteries.
- When performing this task with your hands, clean your hands and remove all water and dirt before performing this task.
- Static electricity can damage electronic components. Discharge static electricity from your body before performing this task. Use one CR1632 battery for each of the left and right dual control levers.
- It is recommended that you use a new battery.

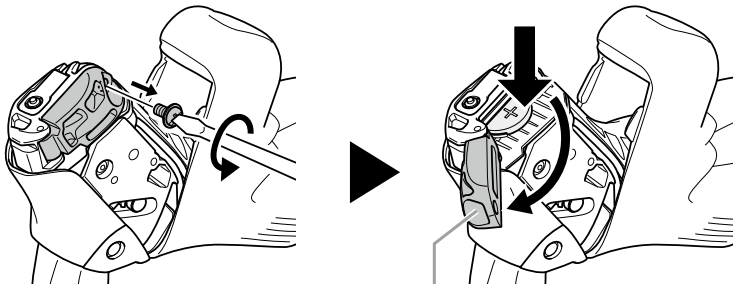
Replacing the battery

1. **Turn over the bracket cover from the front side.**



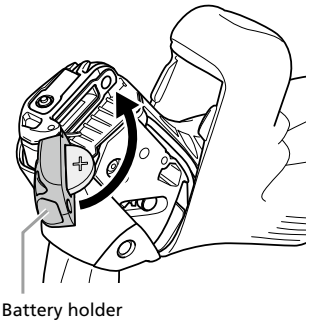
2. **Open the battery holder using a screwdriver, and remove the old coin battery by pushing its tip down.**

   If it is difficult to remove a coin battery, affix tape, etc. to the surface of the coin battery and pull it out.



3. **Set the new battery to the battery holder.**

   As shown in the figure, set the battery with the positive (+) side showing.



4. **Gently close the battery holder, and firmly secure it with a screwdriver.**

   Be careful not to overtighten the screw, as it may cause damage.

   - Before closing the battery holder, check that the waterproof sealing gasket and contacting surfaces are free of foreign substances (such as dirt, dust, sand, hair, thread, or liquids).
   - If there are foreign substances present, wipe them away with a clean, dry, and lint-free cloth.
   - Open the battery holder only when replacing the battery, and do not leave it open. Doing so may cause problems with operation due to foreign objects getting inside or deterioration to the electronic component, etc.

- Installing the battery with the positive (+) and negative (-) polarities reversed will not only stop the component from operating, it may also cause the component to malfunction. Make sure the coin battery is installed correctly.
- After replacement, check that it works normally.

Recovery function using wireless function

If a problem occurs with wired communication for some reason when riding using wired connections, it will automatically switch to wireless communication.

However, it takes approximately 10 seconds to switch to wireless communication.

* Wireless communication with the rear derailleur must have been enabled by configuring the settings in advance. Contact the place of purchase for details.

Method for pairing with the rear derailleur

Refer to the user's manual for E-TUBE PROJECT or contact the place of purchase for information about pairing.



https://si.shimano.com/um/7J4MA/PAIRING_PROCESS

How to perform bed-in

To optimize the performance of the pads and rotor, perform the bed-in procedure as explained in the steps below:

1. **Ride your bicycle in a flat and safe area without obstacles and depress the brake lever an amount that enables pedaling.**

   Do this only with one brake lever at a time. For your bicycle with gear shifting capability, shifting the chain to the largest sprocket and the smallest chainring makes pedaling easier. If it has the assist function, perform bed-in with the function OFF. Performing bed-in with the function ON may overheat the rotor and cause discoloration and noise.

2. **With the brake lever depressed, ride your bicycle for 20 m.**

3. **Repeat steps 1 and 2 at least 10 times for both the front and rear brakes.**

   While repeating the process, the braking force will increase.

⚠ CAUTION

- When using resin pads, perform bed-in for a longer period of time than metal pads. Resin pads are designed to reduce the amount of noise generated between the pads and the rotor when the brakes are operated. A longer bed-in period is required than for metal pads.
- Disc brakes have a bed-in period, and the braking force will gradually increase as the bed-in period progresses. You may lose control of the bicycle, which can result in serious injury due to a fall or collision. (The same thing will happen when the pads or rotor are replaced.)

Specifications

Frequency band	2.4 GHz
Maximum radio-frequency power	<10 dBm
Firmware version	4.0.0 or later

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