

microSHIFT

E-Derailleur Installation



Components and Derailleur Specifications

- E-Shifter
- CR2032 battery (qty 1)
- E-Rear Derailleur
- Derailleur Battery Case
- 18650 Battery (qty 3)
- Battery Charger

Model Number	RD-ET5290S	RD-ET5200S	RD-ET5210M
Speed	9 speed	10 speed	11 speed
Cage Length	Short Cage	Short Cage	Medium Cage
Max Cog	34-38t	34-38t	40-42t
Max Cog (sample)	34t	38t	42t
Capacity	27t	27t	31t
Compatibility	Mountain Bike Dropout		
Supply Voltage (DC)	12V		
Standby Current	4nA		
Operation Current	0.8A		
Communication	Bluetooth (BLE)		
Ingress Protection Rating	IPX5		

Shifter Button Functions

Short Press - the Green LED flashes and the shifter enters Tuning Mode. After adjustments are made, a second short press puts the shifter back to riding mode.

Long Press - While in Tuning Mode, press and hold the Tuning button for 5 seconds. The e-Rear derailleur will reset to the default factory settings.



Shifter and Battery Pack Setup

Part I

Use a coin or washer to open the battery cover on the Shifter, counter-clockwise. Install the CR2032 battery with the positive (+) side facing out. Ensure the battery holder securely holds the battery in place.



Shifter and Battery Pack Setup

Part II

Make sure the battery cover is completely locked and the cover sits flush with the shifter.



Shifter and Battery Pack Setup

Part III

Unthread the 4 screws on the battery pack with a 2.5mm hex wrench.



Shifter and Battery Pack Setup

Part IV

Install three 18650 batteries. Do not close the cover after the batteries are installed.



Shifter and Battery Pack Setup

Part V

Connect the Derailleur to the Battery Case power cord. NOTE: the cords must be connected tightly. Align the arrows on the plugins and make sure there is no gap in the connection.



Shifter and Battery Pack Setup

Part VI

Use the Shifter to test rear derailleur operation. The derailleur will respond to the movement of the shift levers. If shifting does not work, confirm that the batteries are properly installed in the battery case.



Shifter and Battery Pack Setup

Part VII

Disconnect the power cord between Derailleur and Battery Case. Close the Battery Case cover and install the bolts. This is a 3D printed case, do not over torque the bolts, ~ 0.3-0.5 Nm.



Shifter and Battery Pack Setup

Part VIII

Attach the Battery Case to the seat post or seat tube.



Shifter and Battery Pack Setup

Part IX

Install the shifter onto the handlebar and torque the clamp 2.5-3 Nm with a 3mm hex wrench.



Rear Derailleur Installation

Part I

Attach the derailleur to the bike. Make sure the B-tension washer is above the derailleur dropout and engages with the B-tension adjustment screw.



Rear Derailleur Installation

Part II

Tighten the derailleur fixing bolt to 8-10 Nm with a 5mm hex bit. Check to make sure the derailleur can rotate freely.



Rear Derailleur Installation

Part III

Wrap the cable around the stays or use a zip tie to ensure the cable does not interfere with the wheel. Connect the Derailleur to the Battery Case power cord. NOTE: the cords must be connected tightly. Align the arrows on the plugins and make sure there is no gap in the connection.



Rear Derailleur Installation

Part IV

Press the Tuning Button on the back of the e-Shifter. The LED will light up Green and the e-Shifter will enter Tuning mode.



Rear Derailleur Installation

Part V

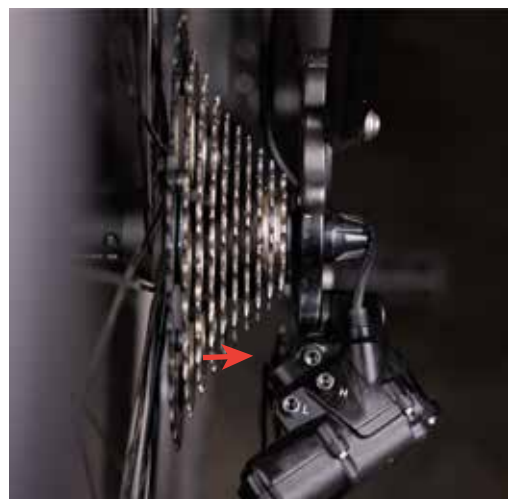
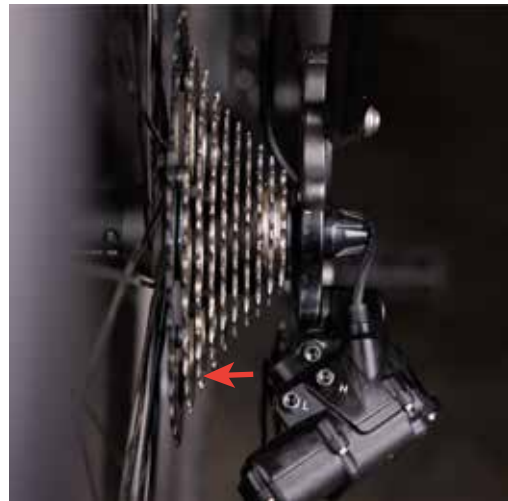
Use the shift levers to align the guide pulley with the outer edge of the 11t cog.



Rear Derailleur Installation

Part VI

A quick push of the shift lever will move the guide pulley towards larger cogs. A quick pull of the shift lever will move the guide pulley towards smaller cogs.



Rear Derailleur Installation

Part VII

Once the centerline of the guide pulley is in line with the outer edge of the 11t cog, press the Tuning Button on the shifter to return to Riding mode.



Chain Measurement

Part I

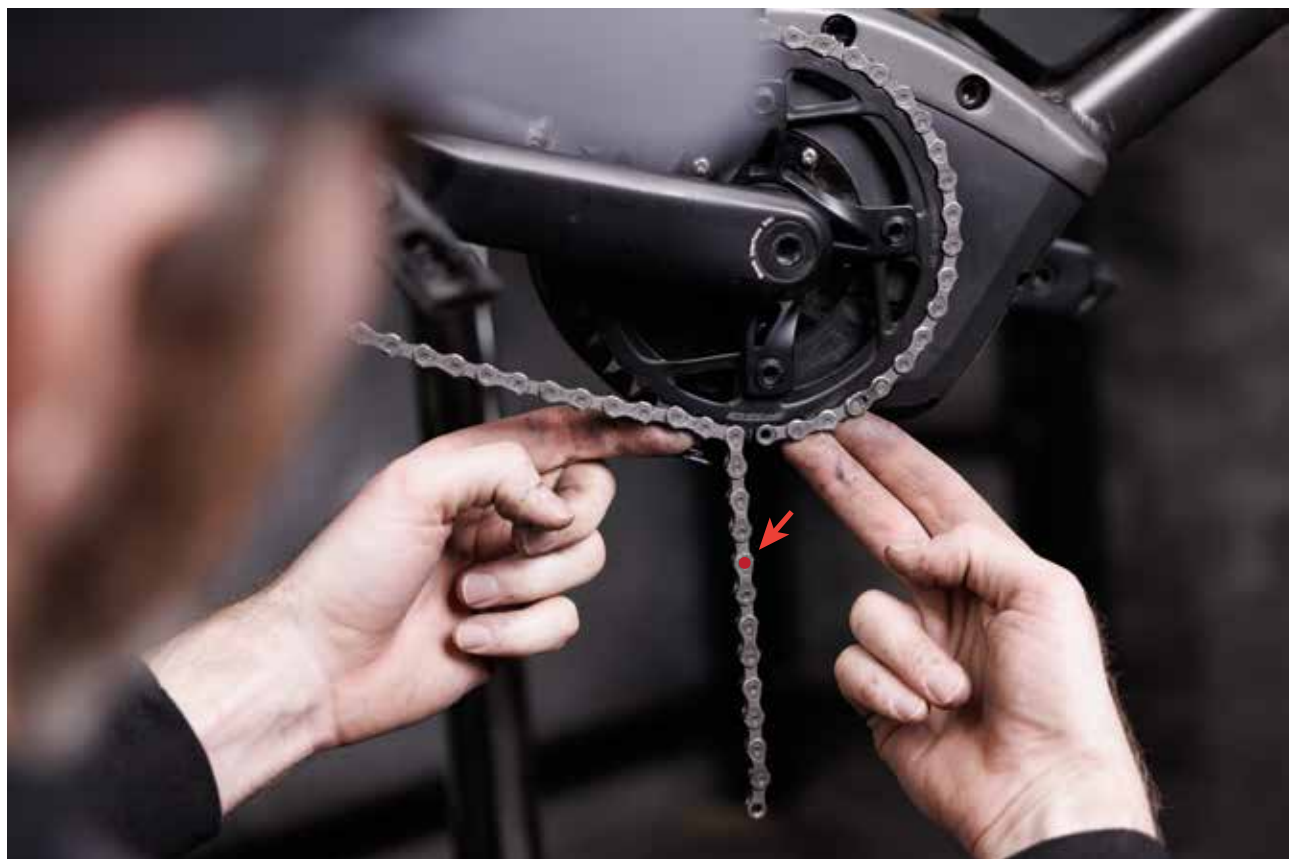
Wrap the chain around the chainring and the largest cassette cog without routing it through the rear derailleur. Stretch the chain tight.



Chain Measurement

Part II

Place two inner links next to each other on the chainring. Add two extra inner links and cut the chain there with a chain breaker.



Chain Measurement

Part III

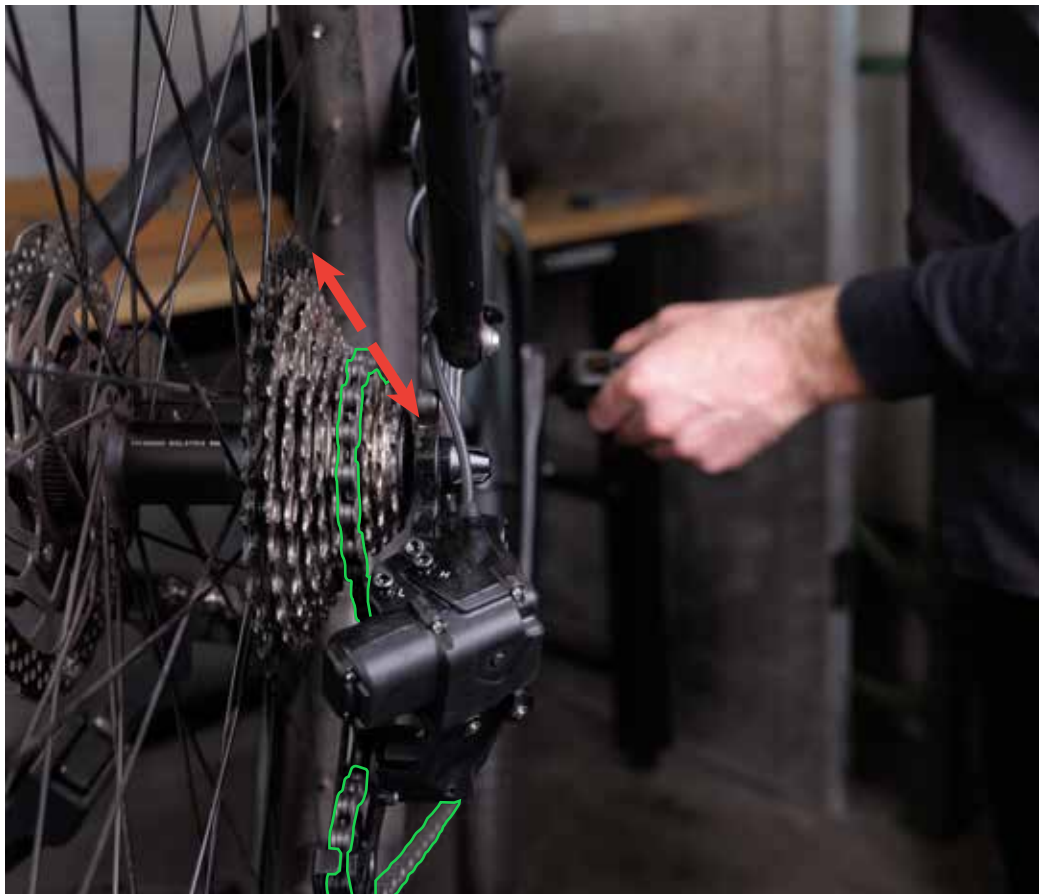
Route the chain over the smallest cog, in front of the guide pulley, behind the derailment prevention plate, and behind the tension pulley. Wrap the chain around the chainring and connect the chain according to the chain manufacturer's instruction manual.



Shifting Adjustment

Part I

Shift the chain up and down the cassette. If you experience interference or noise, repeat steps 4-6 of the derailleur installation until the gear adjustments are completed.



Shifting Adjustment

Part II

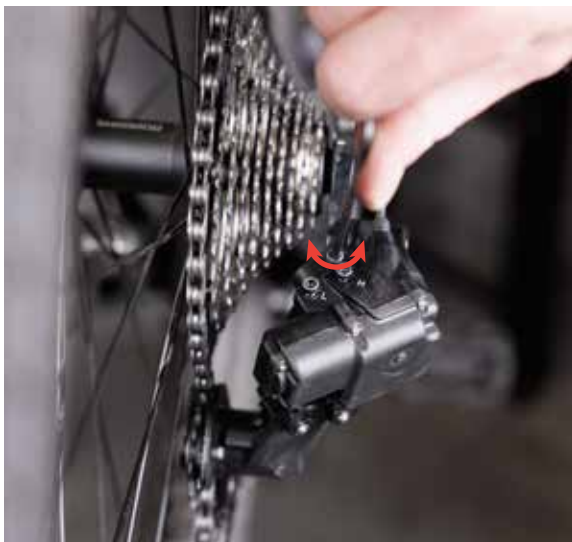
Shift to the largest cassette cog. (1) Thread in the Low limit screw until the screw contacts the derailleur. Then, (2) unthread the Low limit screw one turn.



Shifting Adjustment

Part III

While in the largest cog, turn the B-tension screw until there is a 4-6mm gap between the guide pulley and the tallest teeth of the largest cog.



Shifting Adjustment

Part IV

Shift to the smallest cog. (1) Turn the High limit screw until it contacts the derailleur. Then, (2) unthread the High limit screw one turn.





REMINDER

1. Rear Derailleur will be in standby mode if being left alone for a period of time. Shake it to wake it up.
2. Please disconnect the power cord of the Rear Derailleur from the Battery Case when not in use. NOTE: this Reminder is only required when using the battery case.
3. When the Shifter LED lights up with a red or yellow light, please charge or replace the battery as soon as possible to maintain normal function.
4. Quick presses with 3 gears short-term memory. The Cypher electronic shifting system can handle rapid consecutive gear shifts, but for the optimal shifting experience, if more than 3 consecutive shifts are made in a short period, the system will only execute the first 3 shifting actions.
5. Rear Derailleur has a safety protection mechanism. If it is judged that the shift is blocked, it will return to its original position after 2 seconds.
6. If the Shifter lights up in white, please check whether there is any interference between the chain and Derailleur. It will automatically recover after 6 seconds.
7. The Battery Case is for testing only and does not have waterproof, shockproof or anti-collision design. Please avoid the above situation.

Pairing and Unpairing

NOTE: e-Derailleurs arrive pre-paired. The provided derailleur will activate upon connecting to the power source without the need for pairing.

Pairing: This operation requires the e-Rear Derailleur to be connected to power and brought close to the e-Shifter.

Press the pairing button on the e-Rear Derailleur once. Then, press and hold the pairing button on the e-Shifter. While pressing the pairing button, pull the shift lever backward towards the clamp. When the LED lights up Blue, pairing is in process. Wait for the blue light to go out before releasing the pairing button and the shift lever.

Unpairing: Open the battery cover of the e-Shifter (with the battery installed). You will see the pairing button next to the battery holder. Hold down the pairing button and simultaneously push the shift lever forward (towards larger cogs). A blue LED light indicates successful unpairing.

Troubleshooting

Shifter LED Indicator

- **Green** - Tuning Mode
- **Blue** - Bluetooth Pairing Mode
- **Cyan** - Shifted to Extreme Gear
- **Red** - Low battery level for Rear Derailleur, (Please charge the battery)
- **Yellow** - Low battery level for Shifter, (Please replace the battery)
- **White** – Derailleur obstructed, check for device or chain interference
- **Purple** – Overload, system will auto-recover in seconds.

The e-Rear Derailleur will automatically go into sleep mode after being idle for a long period. It can be awakened by shaking.

The e-Rear Derailleur has a safety protection mechanism. If it detects an obstruction during a gear shift, it will revert to the original gear position.

REGULATORY INFORMATION

Federal Communications Commission (FCC) Statement

15.105(b)

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 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.

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

REGULATORY INFORMATION

FCC RF Radiation Exposure Statement:

This Transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

For portable operation, this device has been tested and meets FCC RF exposure guidelines. When used with an accessory that contains metal may not ensure compliance with FCC RF exposure guidelines.

EU

Hereby, AD-II Engineering Inc. declares that the radio equipment type SL-ET5001-L and SL-ET5001-R are in compliance with Directive 2014/53/EU

The full text of the EU declaration of conformity is available at the following internet address: <https://www.microshift.com/tech-documents/>

Model	Frequency (MHz)	EIRP (dBm)
SL-ET5001-L	2402~2480	2.62
SL-ET5000-R	2402~2480	-0.72

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