

Dealer's Manual

ROAD	GRAVEL	MTB
E-BIKE	LIFESTYLE	GENERAL

Rear Derailleur (Di2)

SHIMANO CUES

RD-U6050

RD-U6070

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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 <https://si.shimano.com> .
- For consumers who do not have easy access to the internet, please contact a SHIMANO distributor or any of the SHIMANO offices 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.

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.

	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.

TO ENSURE SAFETY

WARNING

- Be sure to follow the instructions provided in the manuals when installing the product.
Only use SHIMANO genuine parts. 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.
- This dealer's manual is for use with RD-U6050 and RD-U6070 only. For information on products not explained in this manual, search for the model on our website (<https://si.shimano.com>).

Be sure to also inform users of the following:

- Clean the chain and QUICK-LINK with an appropriate chain cleaner regularly. Intervals between maintenance depend on the use and riding circumstances. Never use alkali- or acid-based solvents such as rust cleaners. If those solvents are used the chain or QUICK-LINK might break and cause serious injury.
- Check that the wheels are fastened securely before riding the bicycle. You may fall or collide and be seriously injured.
- Check the chain for any damage (deformation or cracking), skipping, or other abnormalities such as unintended gear shifting. If any problems are found, consult your place of purchase or a distributor. The chain may break, and you may fall.
- Be careful not to let the hemming of your clothes get caught in the chain while riding. Otherwise, you may fall off the bicycle.

NOTICE

Be sure to also inform users of the following:

- Be sure to rotate the crank while performing all switch operations related to gear shifting.
- Do not keep connecting and disconnecting the small waterproof connector. Doing so may impair the waterproofing.
- Be careful not to get water into the E-TUBE ports.
- 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 in a high-pressure wash. If water gets into any of the components, operating problems or rusting may result.
- Be sure to keep turning the crank during gear shifting operations.
- Handle the components carefully, and avoid subjecting them to strong shock.
- Do not use the thinners or harsh solvents to clean the products.
- 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 SHIMANO website.
- 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.

■ Rear Derailleur

- If gear shifting operation does not feel smooth, consult the place of purchase for assistance.
- If you feel the chain or other drivetrain components skipping, consult the place of purchase for assistance.
- If you hear abnormal noise as a result of excess play in a pulley while riding, you should replace the pulley at the place of purchase.
- The gears should be periodically washed with a neutral detergent. In addition, cleaning the chain with neutral detergent and lubricating it can be an effective way of extending the life of the gears and the chain.
- If excess play in the links is so great that gear shifting adjustments cannot be made, replace the shifting unit.

For installation to the bicycle and maintenance

- Be sure to attach dummy plugs to any unused E-TUBE ports.
- Be sure to use the SHIMANO original tool TL-EW300 to remove and install the electric wires.
- The motor unit cannot be disassembled and repaired.

- Use a brake hose/outer casing which still has some length to spare even when the handles are turned all the way to either side. Furthermore, check that the shift lever does not touch the bicycle frame when the handles are turned all the way.
- Use the specified cable and cable guide for smooth operation.
- The clamp band, clamp screw and clamp nut are not compatible with other products. Be sure to always use the clamp band, clamp screw and clamp nut which is specific to each product.

■ Electric wires / electric wire covers

- Secure the electric wires with a zip tie so that they do not interfere with the gears or tires.
- The strength of the adhesive is fairly weak to prevent the paint on the frame from being peeled off when removing the electric wire cover, such as when replacing the electric wires. If the electric wire cover is peeled off, replace it with a new one. When removing the electric wire cover, do not peel it off too vigorously. If so, the paint on the frame will peel off, too.
- Do not remove the wire holders which are attached to the internal type electric wires (EW-SD300-I). The wire holders prevent the electric wires from moving inside the frame.
- When installing to the bicycle, do not forcibly bend the electric wire plug. It may result in a poor connection.

■ Rear Derailleur

- Be sure to adjust the high limit screw and the low limit screw according to the instructions given in the adjustment section. If these instructions are not observed, the chain may become clamped between the spokes and the largest sprocket and the wheel may lock, or the chain may fall off the small sprocket.
- Periodically clean the shifting unit and lubricate all moving parts (mechanism and pulleys).
- If gear shifting adjustments cannot be carried out, check the degree of parallelism of the dropout.
- The guide pulley and tension pulley have an arrow on one side to indicate the direction of rotation. When installing the pulleys, install so that the surfaces with arrows are on the inner side when looking from the outer side of the shifting unit.

The actual product may differ from the illustration because this manual is intended mainly to explain the procedures for using the product.

For installation to the bicycle

■ Notes on reinstalling and replacing components

- When the product is reinstalled or replaced, it is automatically recognized by the system to allow operation according to the settings.
- If the system does not operate after reinstallation and replacement, follow the system power reset procedure

to check the operation.

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

List of tools to be used

The following tools are needed for installation, adjustment, and maintenance purposes.

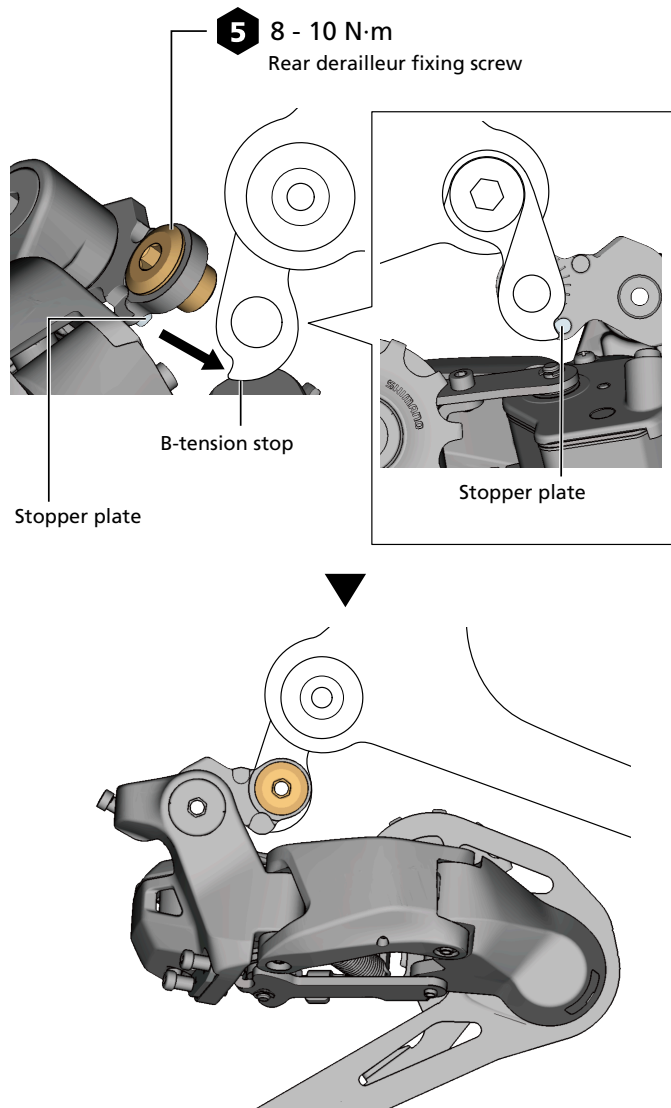
Tool	
	TL-EW300
	2 mm hexagon wrench
	3 mm hexagon wrench
	5 mm hexagon wrench

Installation / removal

Installing the rear derailleur

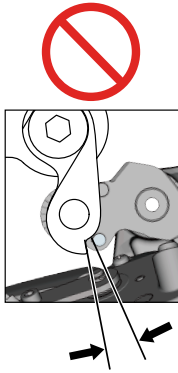
1. Secure the rear derailleur.

Be careful not to insert the rear derailleur fixing screw in the derailleur hanger at an angle. In addition, be sure to install the rear derailleur so that the stopper plate contacts the B-tension stop, with no gap in between.



NOTICE

- Periodically check to make sure that there is no gap between the B-tension stop and the stopper plate. If there is a gap between these two parts, problems with gear shifting performance may occur.



Connecting / disconnecting the electric wires

Be sure to use the SHIMANO original tool to connect and disconnect electric wires.

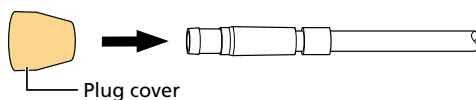
NOTICE

- When connecting and disconnecting electric wires, do not forcibly bend the plug part. It may result in a poor connection.

Connecting the electric wire

Connect the electric wire to the E-TUBE port.

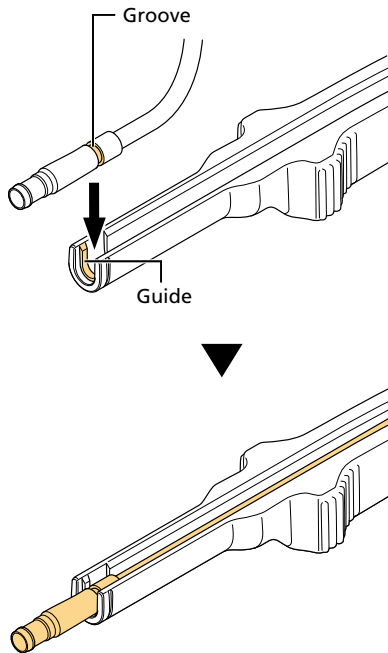
1. Set the plug cover over the electric wire.



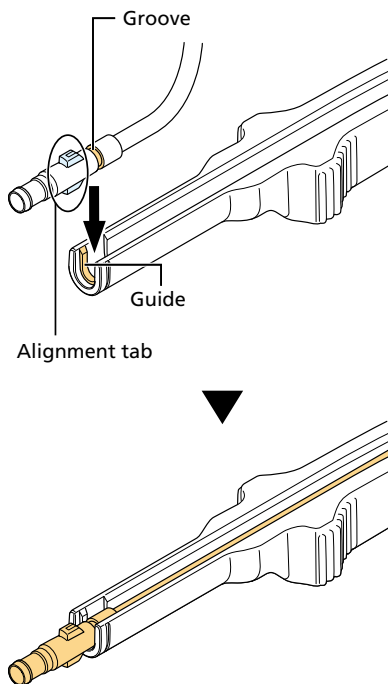
2. Set the plug of the electric wire to the TL-EW300.

If there is an alignment tab on the plug of the electric wire, check the shape of the E-TUBE port you are trying to connect to, and set it aligned with the alignment tab as shown in the figure.

Without alignment tab on plug

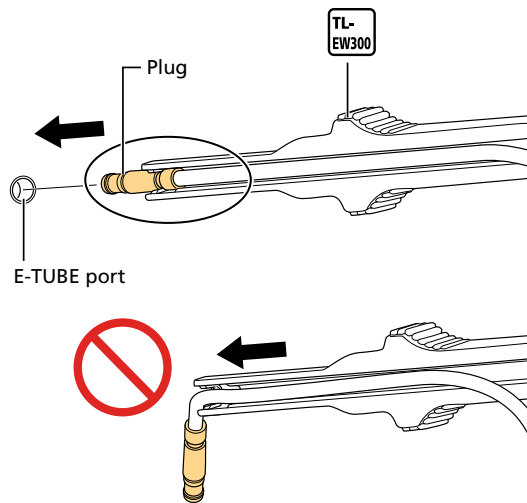


With alignment tab on plug



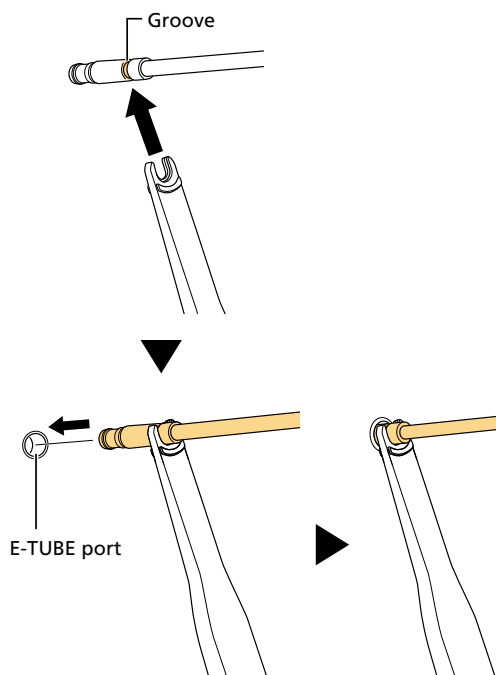
3. Insert the plug on the electric wire into the E-TUBE port.

Push it straight in until you feel it click into place.

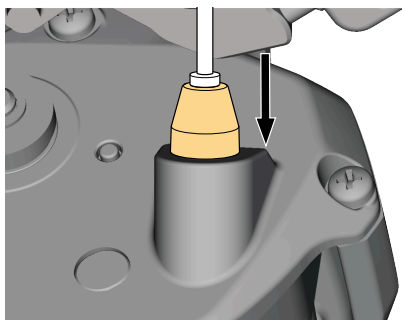


TECH TIPS

- You can use the TL-EW300 as indicated in the figure to install the electric wire.

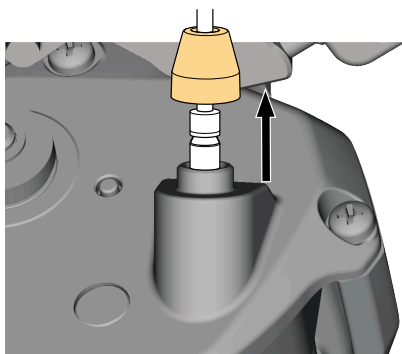


4. **Firmly set the plug cover against the rear derailleur.**



Disconnecting the electric wire

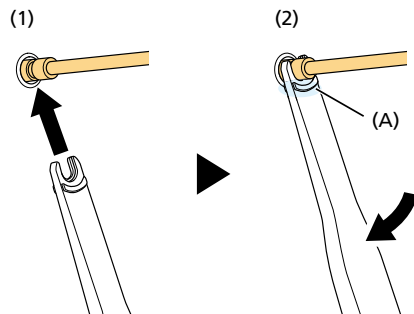
1. **Slide up the plug cover.**



2. Disconnect the electric wire.

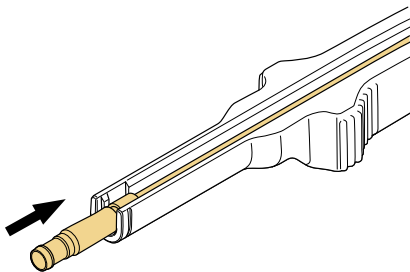
- (1) Insert the TL-EW300 into the groove on the plug part of the electric wire.
- (2) Disconnect the electric wire from the E-TUBE port.

* As shown in the figure, use part (A) of the TL-EW300 as a fulcrum, move the tool like a lever, then disconnect the plug part.



TECH TIPS

- If there is limited space to insert the tool, you can use the TL-EW300 as indicated in the figure to disconnect the electric wire.



Checking connections

1. After connecting the electric wires to all of the components including this product, install the battery and check the operation.
2. Check that the rear derailleur operates properly by operating the shift switch.

How to operate

Switching operation modes

Mode	Function button operation	Action	LED	
Normal mode	Double-click	Switching to automatic gear shifting		Flashing green [Auto1]: Once [Auto2]: Twice
	Press and hold for 2 - 5 seconds	Switching to adjustment mode		Yellow
Adjustment mode	Press and hold for 0.5 seconds	Switching to normal mode		OFF

Switching to automatic gear shifting

You can customize the gear shifting features, etc. of automatic gear shifting in E-TUBE PROJECT Cyclist and register them as [Auto1] and [Auto2].

The registered settings can be switched by double-clicking the function button on the rear derailleur.

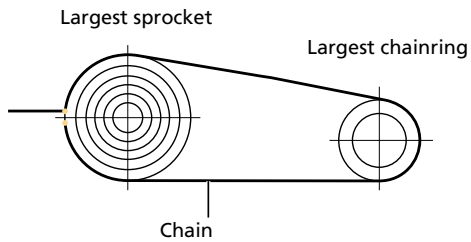
* Automatic gear shifting does not switch from [Auto1] to [Auto2] when [Auto2] is disabled in the E-TUBE PROJECT settings. For details on the function, refer to the user's manual for E-TUBE PROJECT .

Adjustment

Checking the chain length

1. Mount the chain on the largest sprocket and the largest chainring.

In order to check the length at the rear of the cassette sprocket, join the two ends of the chain at the rear of the cassette as shown in the figure.



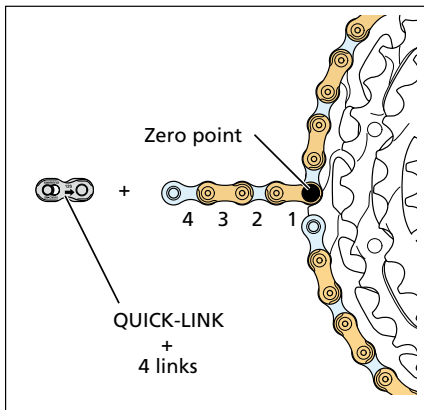
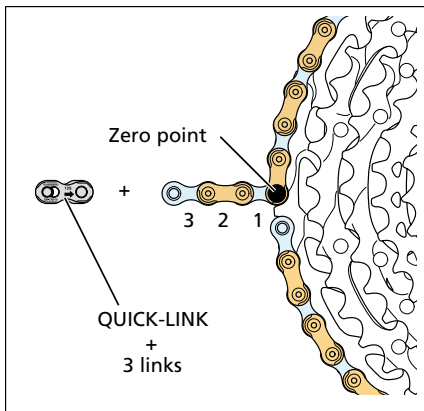
Adjustment

Checking the chain length

2. Check the length of the chain.

With the zero point of the chain established on the rear of the largest sprocket, the proper final chain length is determined by adding a certain amount of links to this resulting chain length. The amount of links is dependent on the chain connection method. See the figures.

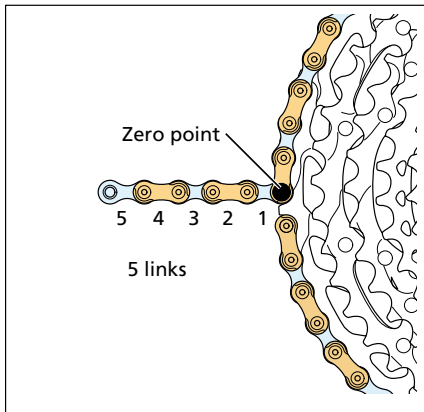
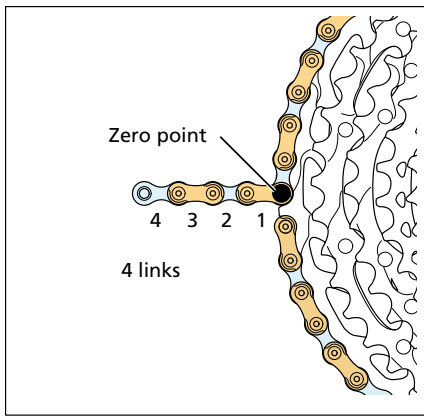
- The same amount of links are added for hardtail bikes and full suspension bikes.
- For full suspension bikes, check the length of the chain with the suspension in its fully extended position.
- QUICK-LINK



- Connecting pin

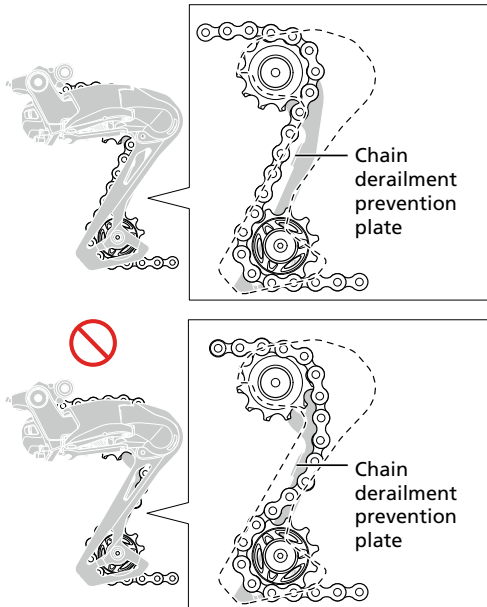
Adjustment

Checking the chain length

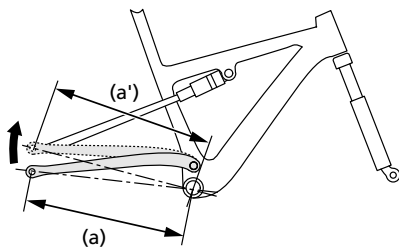


NOTICE

- The rear derailleur plate assembly is equipped with a plate that prevents chain derailment. When passing the chain through the rear derailleur, pass it through the main body of the rear derailleur from the side of the chain derailment prevention plate as shown in the figure.
- If the chain is not passed through the correct position, damage may be caused to the chain or the rear derailleur.



- For full suspension bikes, length (a) will vary according to the movement of the rear suspension. After shifting to the largest chainring and the largest sprocket, make sure that the chain length is not too short when dimension (a) is at its maximum extension. If the chain length is too short, drivetrain components may be damaged due to excessive load on the drivetrain.



Installing the chain

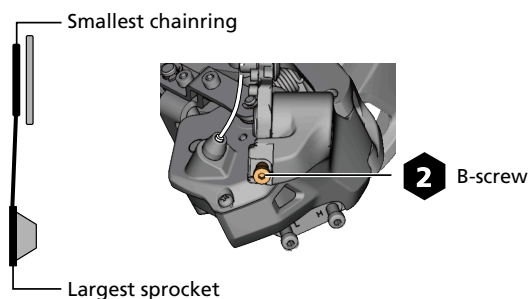
Refer to the dealer's manual for the chain to find instructions on installing/removing the chain.

Adjusting the rear derailleur

Adjusting the B-screw

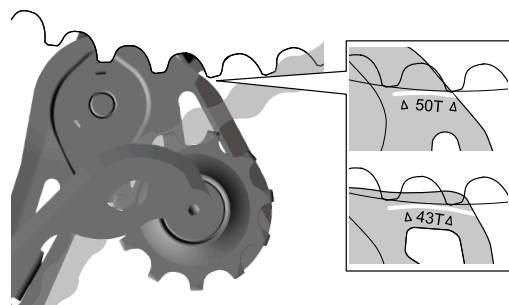
1. **Shift the chain to the smallest chainring and the largest sprocket.**

Turn the crank arm and shift the gears.



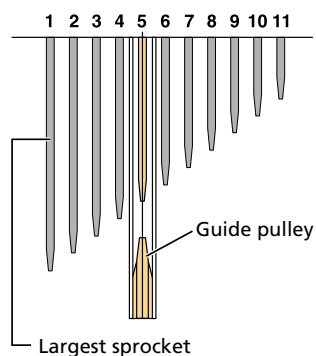
2. **Adjust the B-screw.**

Align the line on the inner side of the outer plate with the tip of the highest tooth on the largest sprocket.



Gear shifting adjustment

1. **Shift the rear derailleur to the fifth gear position from the largest sprocket.**

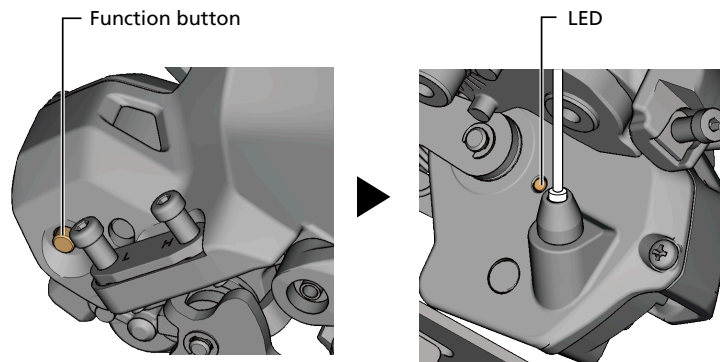


Adjustment

Adjusting the rear derailleur

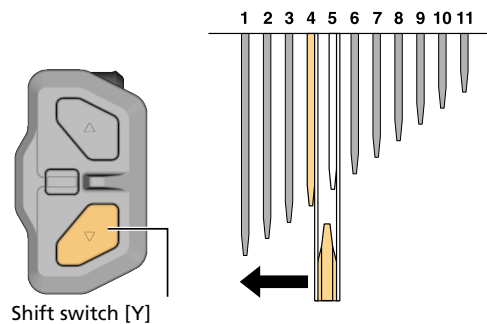
2. Switch the gear shifting system to adjustment mode.

Press and hold the function button for 2 - 5 seconds until the LED lights up yellow.



3. Press shift switch while turning the crank arm, and move the guide pulley toward the largest sprocket.

Move it to the position where the chain makes contact with the fourth gear and a subtle noise is heard.



TECH TIPS

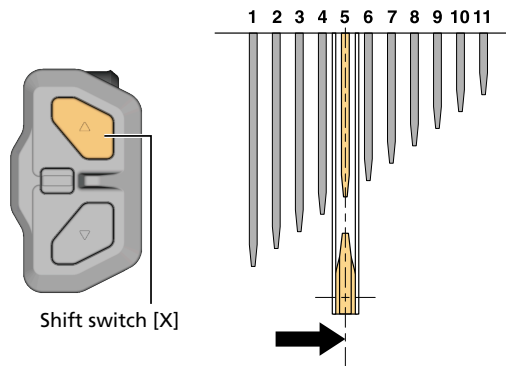
- The derailleur can move 18 steps inward and 18 steps outward from the initial position, for a total of 37 positions.
- In adjustment mode, the guide pulley will overrun slightly, then move back in an exaggerated manner so that you can check the adjustment direction. When checking the positions of the guide pulley and the gear, perform the check when the rear derailleur has come to a stop.

Adjustment

Adjusting the rear derailleur

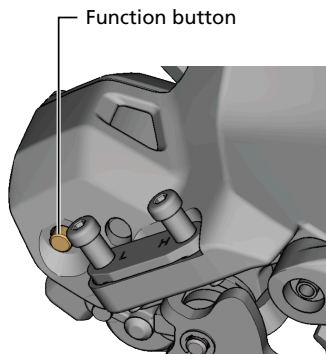
4. **Press the shift switch five times, and move the guide pulley five steps toward the smallest sprocket.**

This position will serve as the target for adjustment.



5. **Switch the gear shifting system back to normal mode.**

Press and hold the function button. (0.5 seconds or more)



Adjustment

Adjusting the rear derailleur

6. Shift to each gear and check that no noise is generated at any sprocket position.

If fine adjustment is needed, switch back to adjustment mode and readjust the rear derailleur.

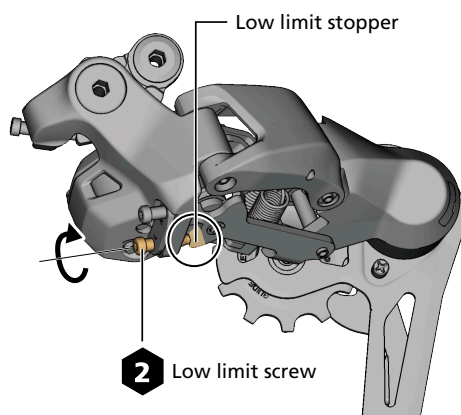
Adjusting the low / high limits

NOTICE

- The following issues may occur if the low/high limits are not properly adjusted:
 - Shifting to the smallest or largest sprocket is not possible. Even if the gears are shifted, the gear may shift back by 1 gear after approximately 5 seconds.
 - Gear shifting noise does not stop.
 - The battery level drops quickly because an undue load is being placed on the motor.
 - The motor may be damaged due to overload (irreparable).
 - The chain will become derailed from the sprocket and damage the rear derailleur, wheel, frame, etc.

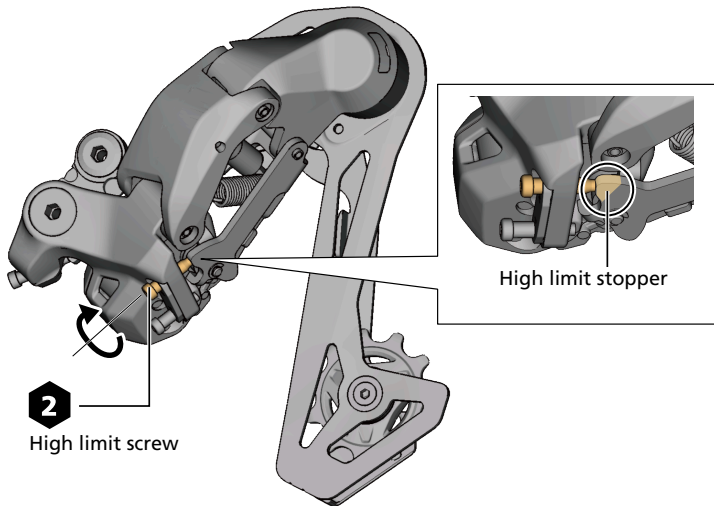
1. Adjust the low limit.

- (1) Shift the rear derailleur to the largest sprocket.
- (2) Tighten the low limit screw until it just touches the low limit stopper.



2. Adjust the high limit.

- (1) Shift the rear derailleur to the smallest sprocket.
- (2) Tighten the high limit screw until it just touches the high limit stopper.
- (3) Turn the high limit screw counterclockwise one turn from position (2) so that an over-stroke allowance can be maintained.



TECH TIPS

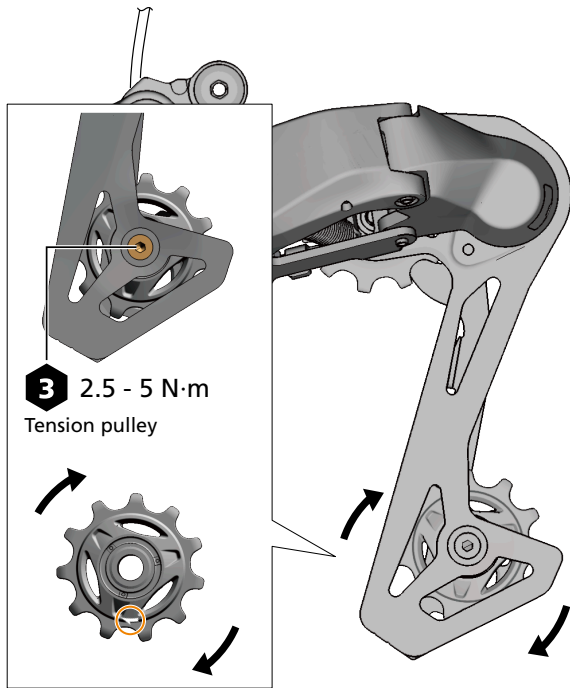
- During gear shifting, the rear derailleur may temporarily move to a position other than the target position. This operation ensures accurate gear shifting, and the rear derailleur will stop at the target position after the operation is complete.

Maintenance

Replacing the pulleys

1. Replace the guide pulley/tension pulley.

Check the arrow direction on the pulleys when installing them. There may be no specified direction in which to install the pulleys, depending on the model.



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