Dealer's Manual

ROAD	GRAVEL	MTB
E-BIKE	LIFESTYLE	GENERAL

Rear Derailleur

CUES

RD-U8000
RD-U6000
RD-U4000

SHIMANO ESSA

RD-U2000

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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.

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 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.

■ When using TL-CT12

- Be careful not to get injured by the blade or needle while working.
- Be careful not to get your fingers pinched by the tool while working.
- Keep the tool out of the reach of small children.

⚠ CAUTION

For installation to the bicycle and maintenance

- Do not allow the wheel to turn while securing the inner cable and installing the inner end cap. Otherwise, you may touch the wheel and be injured.

NOTICE

Be sure to also inform users of the following:

- For SHADOW RD+ models, be sure to check that the plate unit cover is installed before riding the bicycle.
- If gear shifting operation does not feel smooth, consult the place of purchase for assistance.
- The gears should be periodically washed with a neutral detergent then lubricated. In addition, cleaning the chain and QUICK-LINK with a neutral detergent and lubricating them can be an effective way of extending the life of the chain and QUICK-LINK.
- 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.

For installation to the bicycle and maintenance

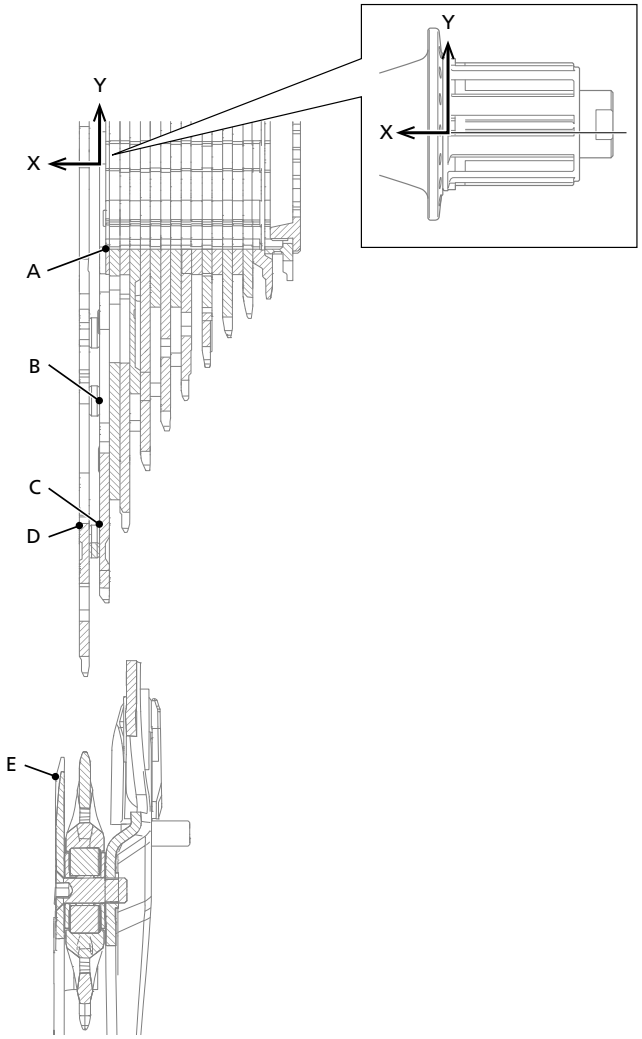
- Depending on the shape of the frame, the rear derailleur may interfere with the chainstay.
- Grease with SIS SP41 Grease (Y04180000) the inner cable and the sliding portions of the outer casing before use to ensure that they slide properly. Do not let dust adhere to the inner cable.
- Use an OT-SP41 outer casing and a cable guide for smooth operation.

- Use an outer casing which still has some length to spare even when the handlebars are turned all the way to either side. Furthermore, check that the shifter does not touch the bicycle frame when the handlebars are turned all the way.
- If gear shifting adjustments cannot be carried out, check the alignment of the rear dropout and check if the cable is lubricated or if the outer casing is too long or too short.
- Periodically clean the shifting unit and lubricate all moving parts (mechanism and pulleys).
- Some tension pulleys have arrows on them to indicate the direction of rotation. In that case, install the pulley so that the rotation direction of the pulley matches the direction of the arrows when the crank is turned in the forward direction.
- If you hear abnormal noise as a result of excess play in a pulley, you should replace the pulley.
- Before using LINKGLIDE products, check the combinations listed in the compatibility information (https://productinfo.shimano.com/#/com). Other products cannot be used because the specifications do not match.

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

Cautions regarding LINKGLIDE 11-speed type

When using 11-speed type LINKGLIDE, interference may occur with the rear derailleur and spokes. Check dimensions beforehand, and check that points D and E do not interfere with the spokes or other parts.



Model No.		A	B	C	D	E
CS-LG700-11 (11-45T)	X mm	0	1.2	1.2	5.8	10
	Y mm	-19.3	-52.5	-62	-62	-104.4
CS-LG700-11 (11-50T)	X mm	0	1.2	1.2	5.85	10
	Y mm	-19.3	-51	-70	-70	-124
CS-LG400-11 (11-45T)	X mm	0	1.2	1.2	5.5	10
	Y mm	-16.25	-51.5	-62	-62	-104.4
CS-LG400-11 (11-50T)	X mm	0	1.2	1.2	5.5	10

	Y mm	-16.25	-42.3	-71	-71	-124

TECH TIPS

- It is also possible to check for interference by using the cassettes listed below and measuring the clearance between the largest sprocket and the spokes, etc.

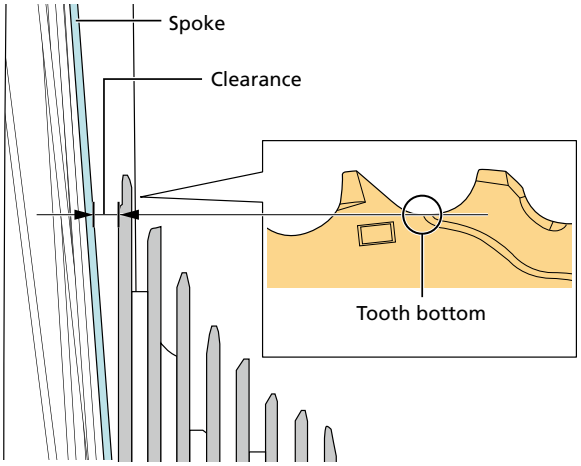
  HG 11-speed 11-51T (CS-M5100): 8.5 mm or more

  HG 11-speed 11-46T (CS-M8000 / CS-M7000): 7.5 mm or more

  LG 11-speed 11-50T (CS-LG600): 5.1 mm or more

  LG 11-speed 11-45T (CS-LG700 / CS-LG400): 4.3 mm or more

* The latest model information can be accessed on our website (https://productinfo.shimano.com/#/).



List of tools to be used

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

Tool	
	2 mm hexagon wrench
	3 mm hexagon wrench
	4 mm hexagon wrench
	5 mm hexagon wrench
	Cross head screwdriver [#2]
	Hexalobular [#27]
	TL-CT12

Installation/removal

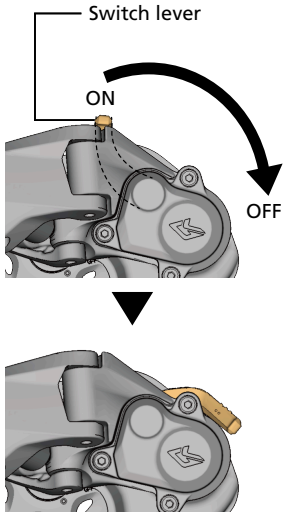
Installing the rear derailleur

TECH TIPS

- The rear derailleur will not gear shift properly if the derailleur hanger is not straight. Use TL-RD11 to check whether the derailleur hanger is straight or not.
- It is recommended to move the switch lever to the ON position while riding to reduce chain slap and to help prevent the chain from falling off the sprockets.

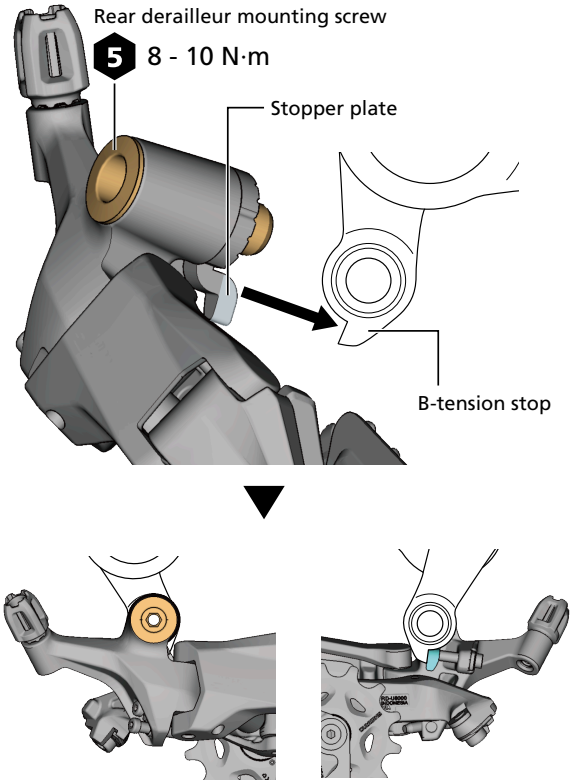
1. **Set the switch lever in the OFF position.**

   For SHADOW RD, this step is not necessary.



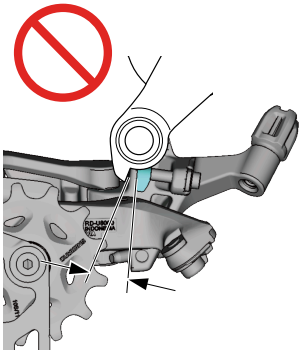
2. **Tighten the rear derailleur mounting screw.**

   Be careful not to insert the rear derailleur mounting 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.



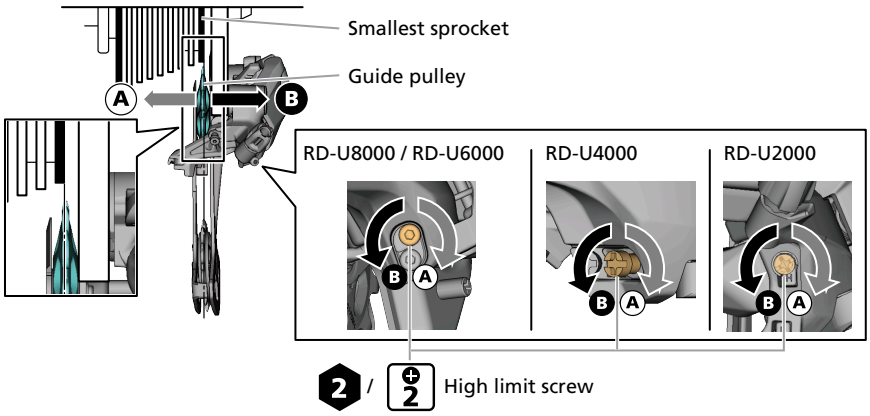
- If the derailleur hanger and stopper plate are not aligned correctly, the derailleur hanger may get scratched or become dented.

Adjustment

Adjusting the stroke on the high limit

1. **Adjust by turning the high limit screw.**

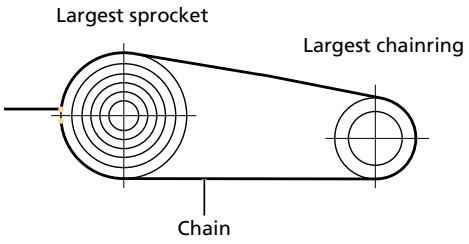
   Adjust so that the center of the guide pulley is aligned with the outer face of the smallest sprocket when viewed from the rear side.



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, join the two ends of the chain at the rear of the cassette as shown in the figure.

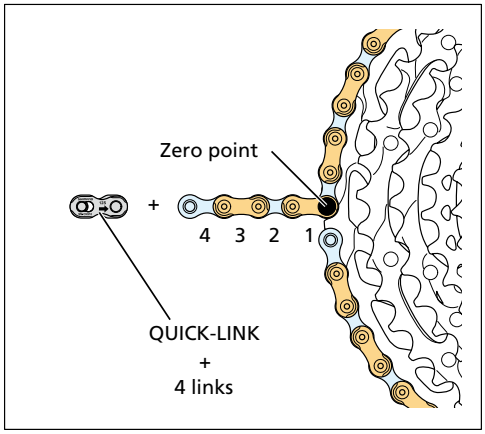


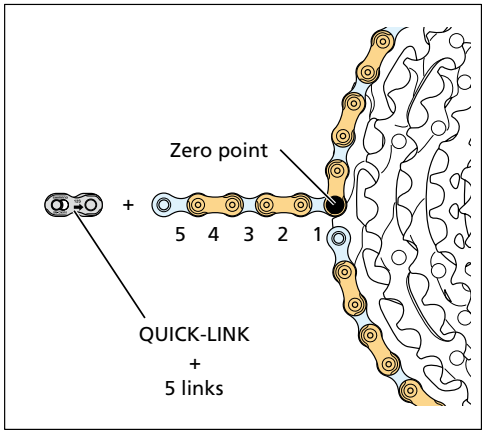
2. **Check the length of the chain.**

   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 type of bike. See the figures.

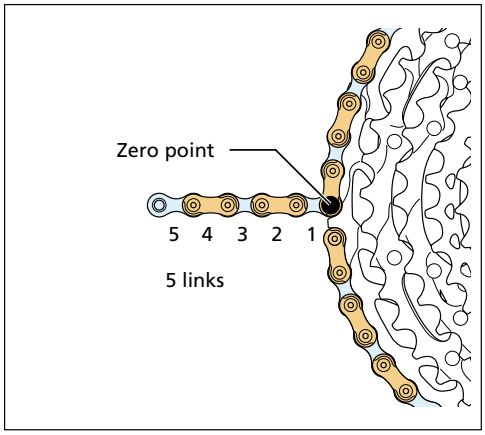
   Hardtail bikes

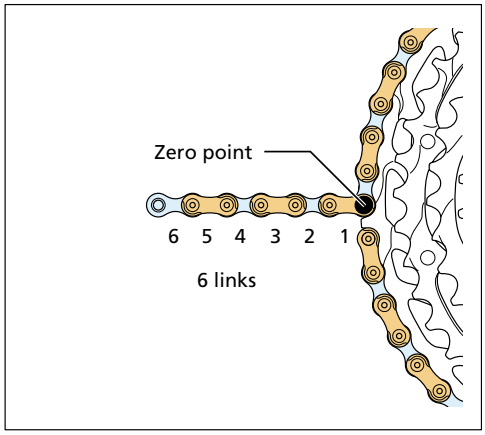
   - QUICK-LINK





   - Connecting pin

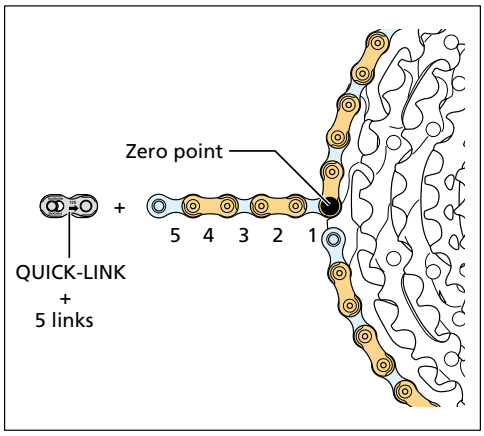


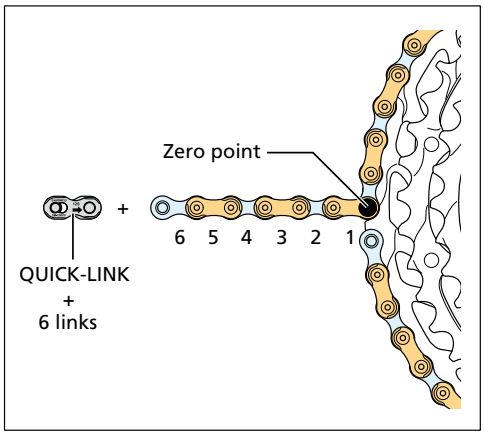


   Full suspension bikes

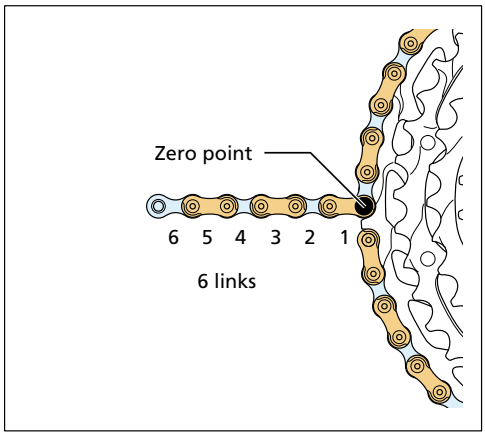
   * For full suspension bikes, check the length of the chain with the suspension in its fully extended position.

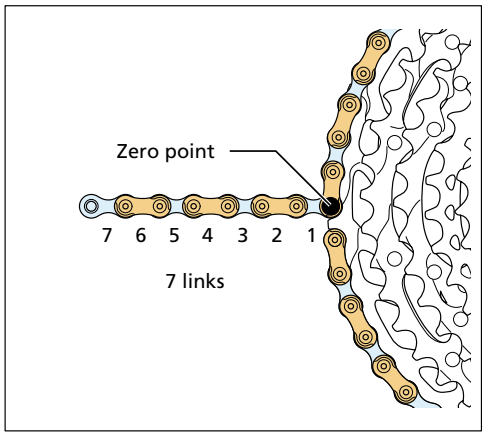
   - QUICK-LINK





- Connecting pin

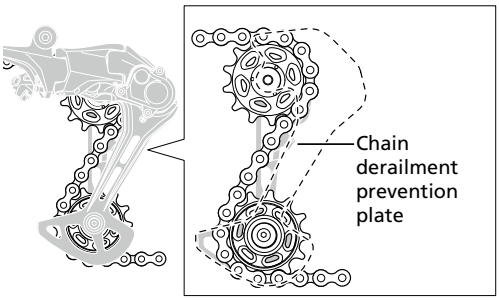


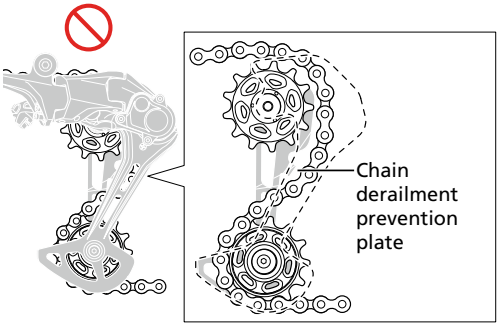


Bike type	Number of links added
Hardtail bikes	4 to 5 links + a QUICK-LINK 5 to 6 links + a connecting pin
Full suspension bikes	5 to 6 links + a QUICK-LINK 6 to 7 links + a connecting pin

NOTICE

- The rear derailleur plate assembly is equipped with a plate that prevents chain derailment. When routing the chain through the rear derailleur plate assembly, route it so that it is on the rear derailleur body 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.

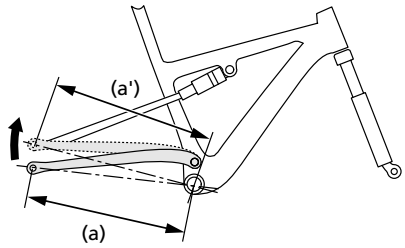




- For full suspension bikes, length (a) will vary according to the movement of the rear suspension.

  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

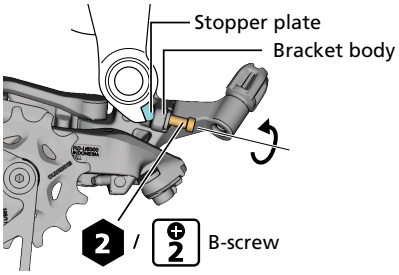
Refer to the dealer's manual for the chain to find instructions on installing/removing the chain.

Connection and securing of the inner cable

Outer casing length

1. **Loosen the B-screw to the position shown in the figure.**

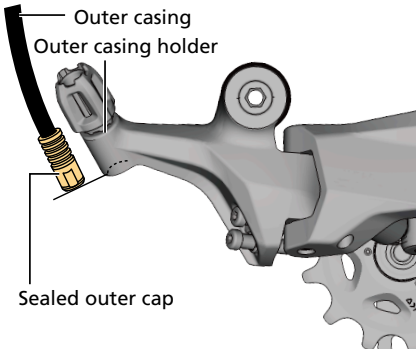
   Make sure that the stopper plate touches the bracket body without leaving a gap.



2. **Determine the length of the outer casing.**

   Temporarily attach a sealed outer cap to the end of the outer casing. Align the end of the outer cap to the bottom edge of the outer casing holder on the rear derailleur.

   Make sure to leave enough slack in the outer casing.



NOTICE

- The length of the outer casing may be insufficient as the rear suspension moves through its travel. Determine the appropriate length at the point in the rear suspension travel where the potential length of the outer casing is the greatest.

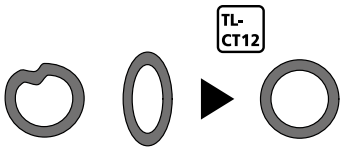
TECH TIPS

- If the motion of the rear derailleur is extreme, such as in bicycles with a rear suspension, replacing the sealed outer cap with the supplied aluminum type sealed outer cap is recommended.



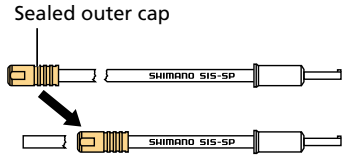
3. **Cut off any excess outer casing with the cable cutter.**

After cutting, return the outside of the outer casing to a perfect circle so that the inside of the hole has a uniform shape.



4. **Install the sealed outer cap to the end of the outer casing.**

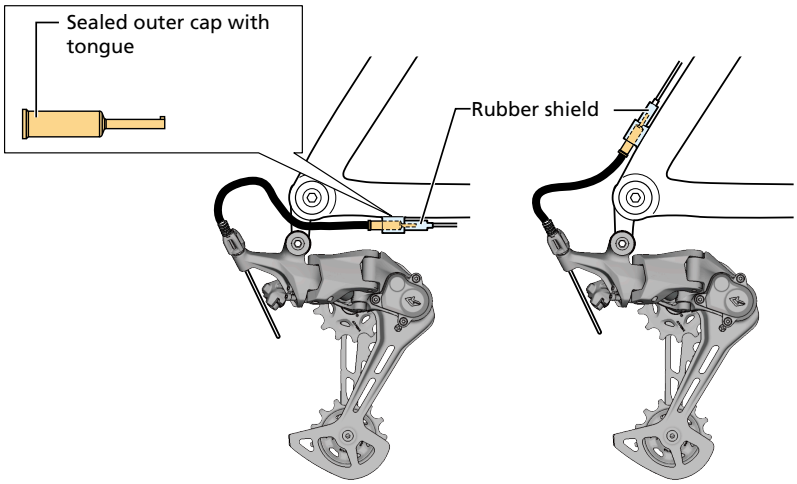
   Route the inner cable through the outer casing.



5. **Install the sealed outer cap with tongue and rubber shield onto the outer casing stopper of the frame.**

   For bikes with full-length outer casing, this step is not necessary.

   Be careful not to bend the cover with tongue.



Connection and securing of the inner cable

⚠ CAUTION

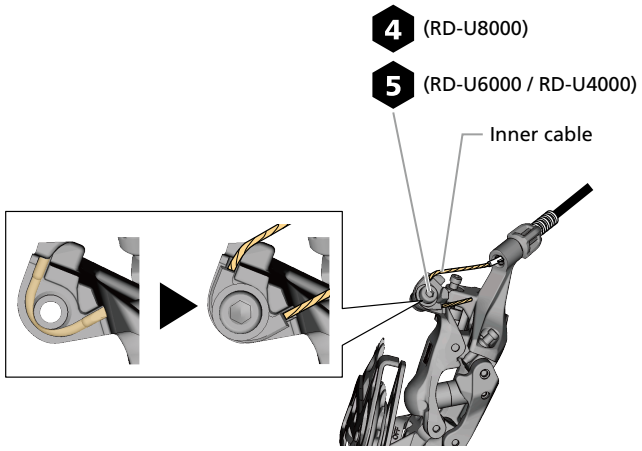
- Do not allow the wheel to turn while securing the inner cable and installing the inner end cap. Otherwise, you may touch the wheel and be injured.

1. **Set the shifter in its initial position.**

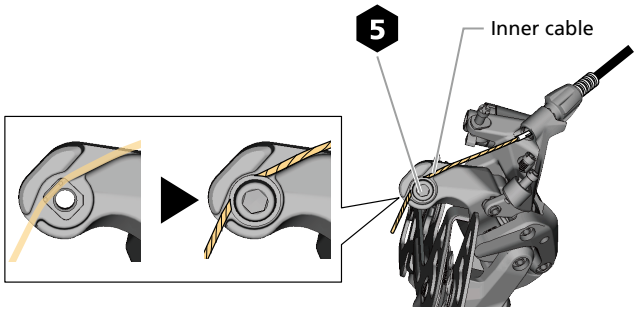
   For example, operate the release lever 10 or more times for an 11-speed.

2. **Secure the inner cable to the rear derailleur.**

RD-U8000 / RD-U6000 / RD-U4000



RD-U2000



NOTICE

- Cables with a polymer coating may develop a fuzzy appearance or texture through natural wear when used. However, if the cables are installed with care according to the procedures outlined in this manual, this is strictly cosmetic and performance will not be affected where the inner cables are housed by outer casing.

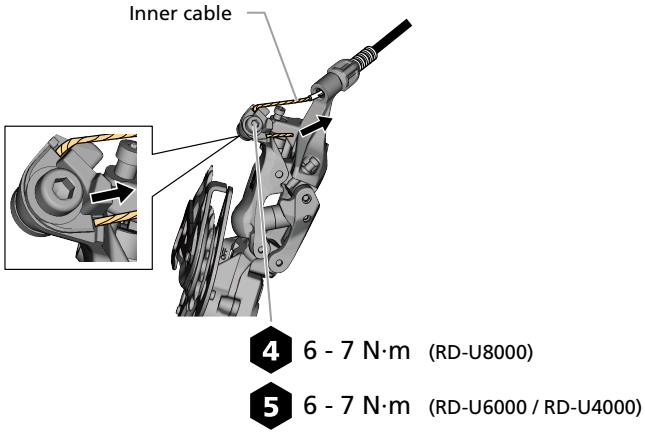
3. **Remove the initial slack from the inner cable.**

   Hold the rear derailleur so that it won't move under load from the shift cable. Operate the shifter several times in order to tension the shift cable assembly and fully seat all the shift cable components.

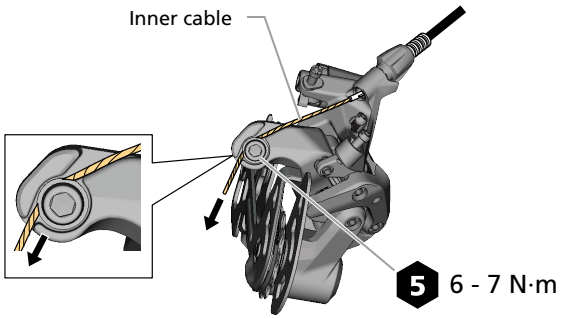
4. **Re-secure the inner cable to the rear derailleur.**

   While pulling the inner cable, be sure that it is securely in the cable fixing groove.

RD-U8000 / RD-U6000 / RD-U4000



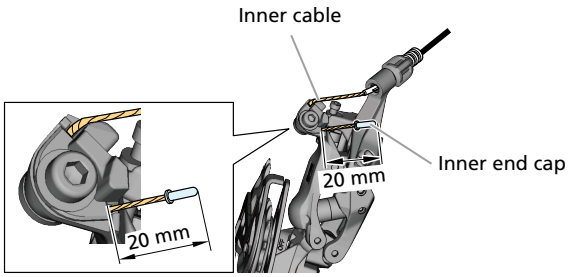
RD-U2000



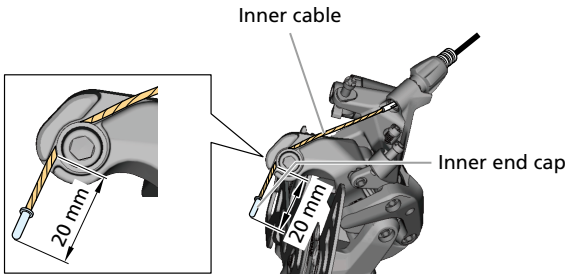
5. **Cut the inner cable so that the protruding length is approximately 20 mm.**

   Install the inner end cap.

RD-U8000 / RD-U6000 / RD-U4000



RD-U2000



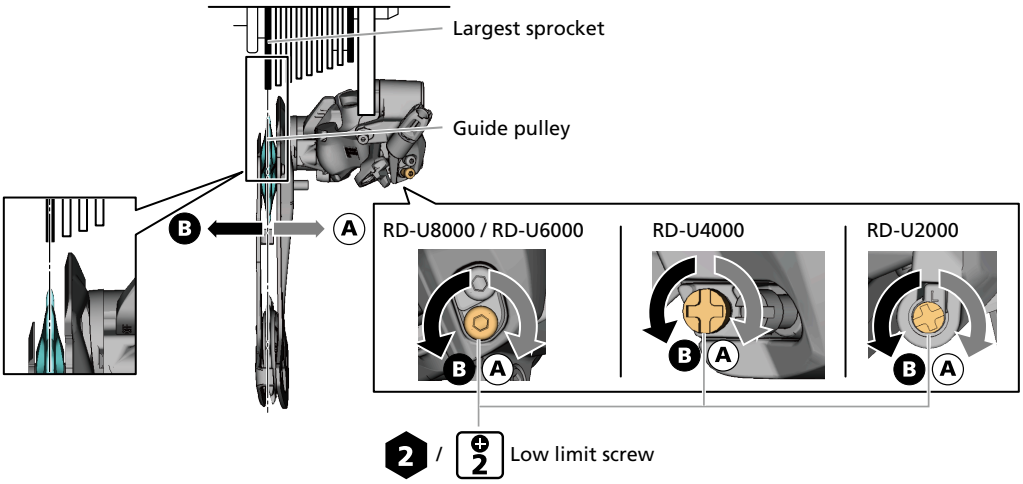
NOTICE

- Check that the inner cable does not interfere with the spokes of the wheel.

Adjusting the stroke on the low limit

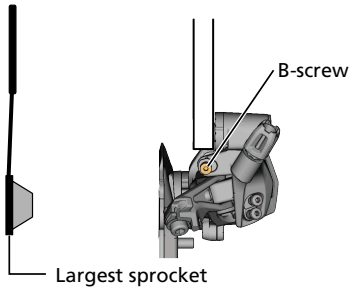
1. **Adjust by turning the low limit screw.**

   Align the center of the guide pulley with the center of the largest sprocket while moving the guide pulley using the shifter, etc.



Adjusting the B-screw

1. **Shift the chain to the largest sprocket.**



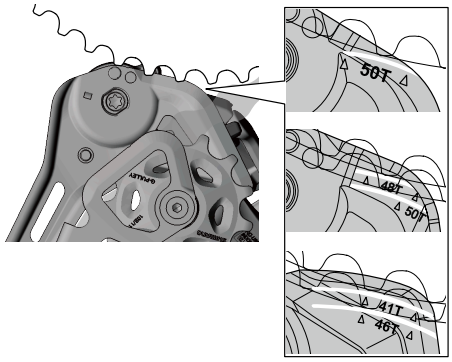
NOTICE

- If there is interference between the sprocket and pulley cage when gear shifting, tighten the B-screw to a position that eliminates the interference.

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

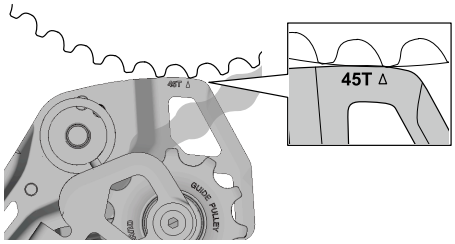
RD-U8000 / RD-U6000 / RD-U4000

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



RD-U2000

Align the contour of the outer plate and the tip of the highest tooth on the largest sprocket with the Δ marking on the inner side of the outer plate.



3. **Turn the crank arm to shift gears and ensure that the shift is smooth.**

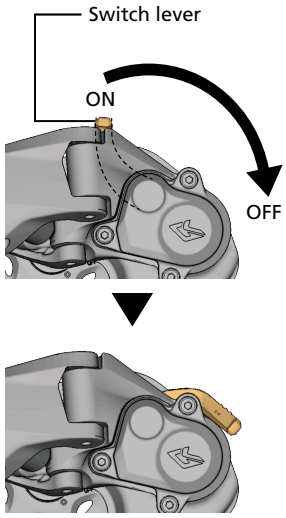
NOTICE

- Perform this adjustment again when using a cassette with a different number of teeth.

SIS adjustment

1. **Set the switch lever in the OFF position.**

   For SHADOW RD, this step is not necessary.

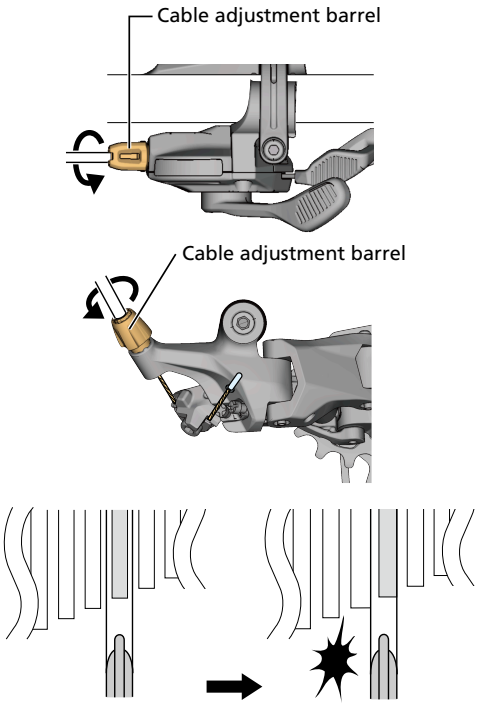


2. **Operate the shifter several times to shift the chain to any gear that is five to seven steps from the largest sprocket.**

   For bicycles with double front chainrings, shift to the largest chainring.

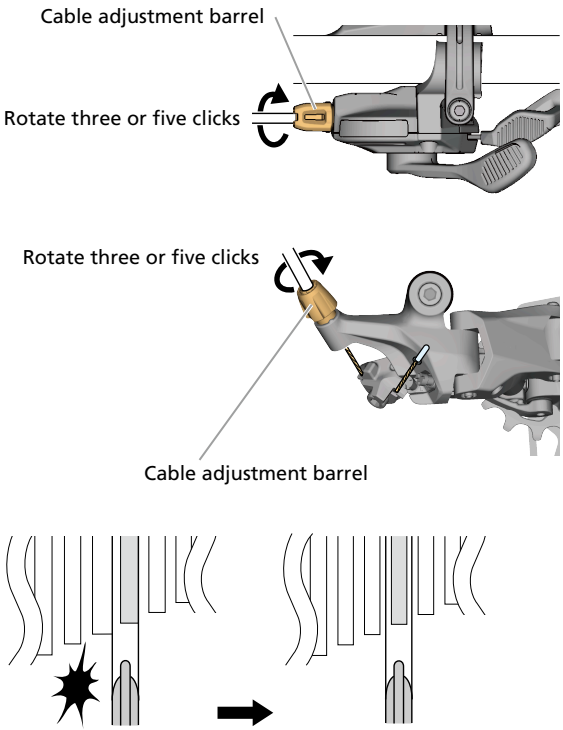
> **NOTICE**
>
> - If the chain rubs against the larger adjacent sprocket and makes noise while turning the crank, turn the cable adjustment barrel clockwise until there is no noise.

3. **Turn the cable adjustment barrel counterclockwise while turning the crank until you start to hear the chain rub on the larger sprocket.**



4. **Turn the cable adjustment barrel three or five clicks in the clockwise direction. This position will serve as the target for adjustment.**

   Turn three clicks for RD-U2000, and five clicks for other models.



5. **Operate the shifter to change gears while turning the crank, and check that no noise occurs in any of the gear positions.**

TECH TIPS

- The rear derailleur will not gear shift properly if the derailleur hanger is not straight. Use TL-RD11 to check whether the derailleur hanger is straight or not.

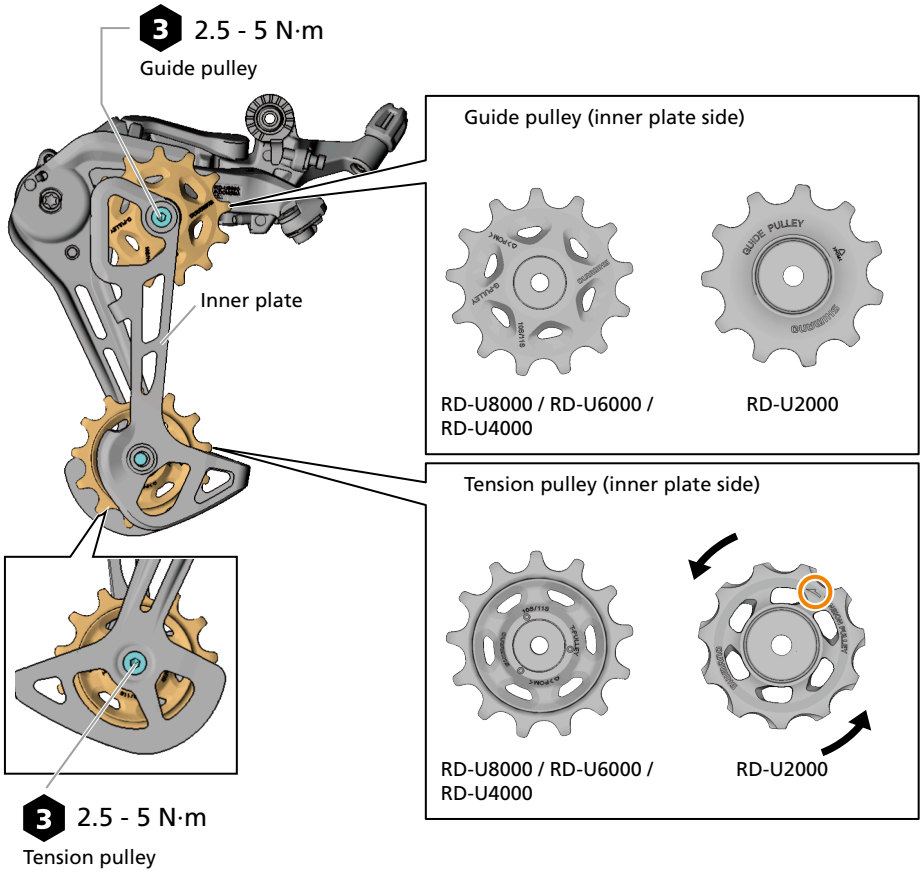
6. **Set the switch lever in the ON position and check that the gear shifting is smooth, consistent, and that there is no noise in any of the gear positions while riding the bicycle.**

Maintenance

Replacing the pulleys

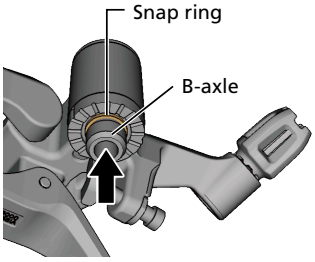
1. **Replace the guide pulley/tension pulley.**

   When installing the pulleys, check the direction of the arrows on them (the rotation direction of the pulleys when the crank is turned in the forward direction). There may be no specified direction in which to install the pulleys, depending on the model.



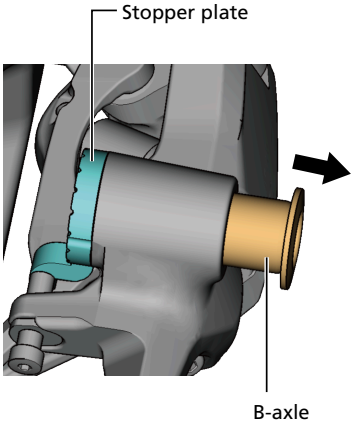
Replacing the B-axle

1. **Push the B-axle from the inner side and use a tool such as a slotted screwdriver to widen and remove the snap ring.**



2. **Remove the stopper plate and B-axle.**

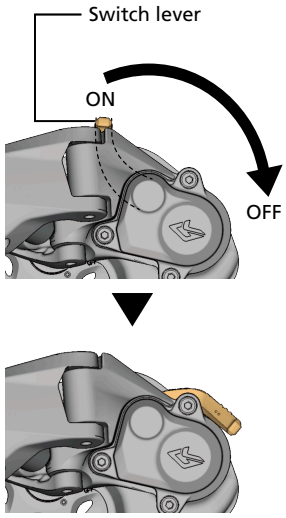
   Replace the B-axle with a new one and install it in the reverse order from the removal procedure.



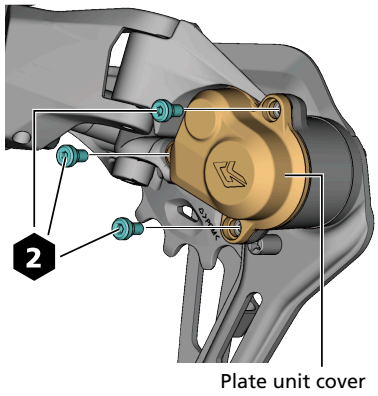
Applying grease to the chain stabilizer

If there is a noticeable change in friction in the chain stabilizer assembly, or if it starts to make noise, you may need to add grease to the chain stabilizer.

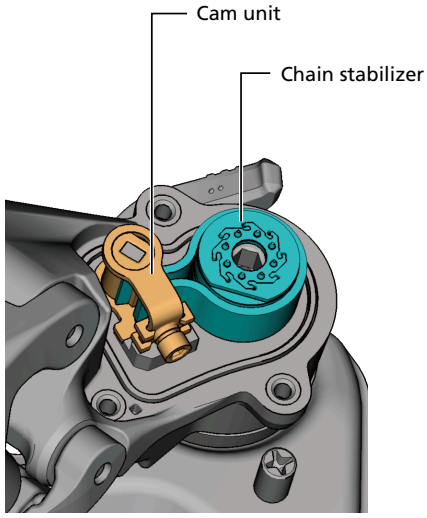
1. **Set the switch lever in the OFF position.**



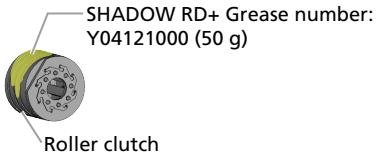
2. **Remove the plate unit cover.**



3. **Remove the cam unit and the chain stabilizer.**



4. Apply the dedicated grease to the outer diameter surface of the roller clutch.



NOTICE

- Be careful not to get grease inside the roller clutch. If grease gets inside the roller clutch, it will cause the roller clutch to stick or slide and malfunction.

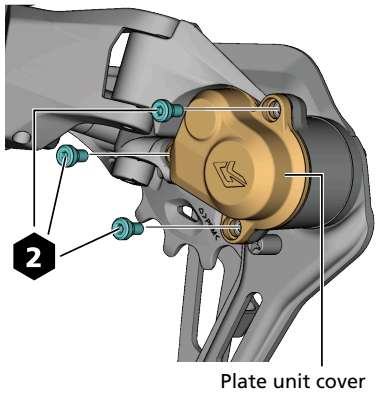
When assembling, reverse the procedure.

Adjusting friction

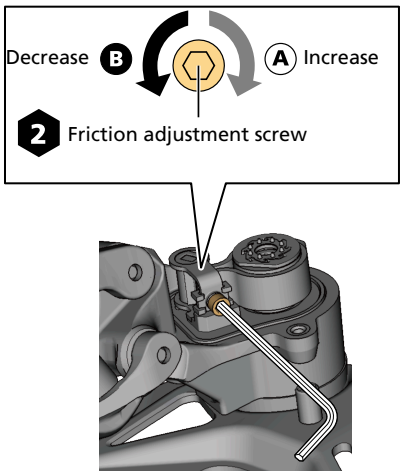
The level of friction can be adjusted as desired. Furthermore, the friction can also be adjusted when it changes during use.

Friction adjustment

1. **Set the switch lever in the ON position.**
2. **Remove the plate unit cover as shown in the figure.**



3. **Turn the friction adjustment screw to adjust the friction.**

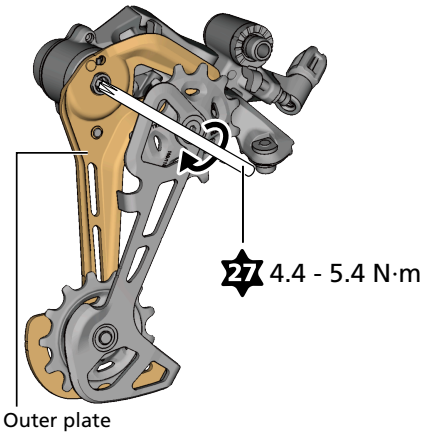


NOTICE

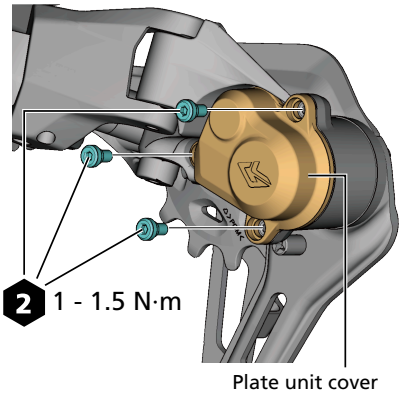
- Do not adjust the friction with a torque of 0.25 N·m or higher. Turning the screw excessively may cause damage.

4. **Check the friction torque.**

   Insert a hexalobular wrench into the outer plate and check the friction torque.

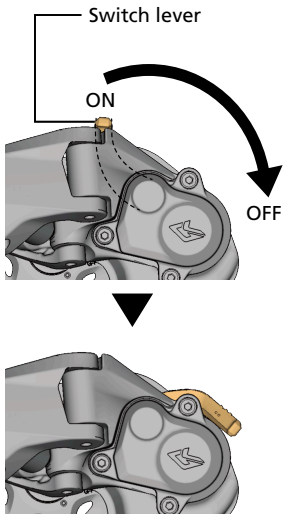


5. Install the plate unit cover as shown in the figure.



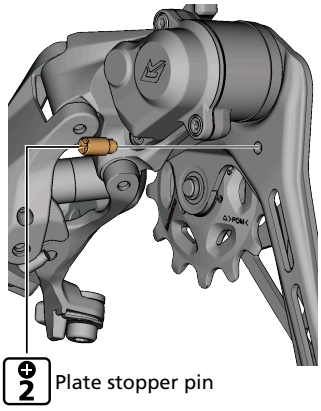
Removing the plate, P-tension spring, and switch lever

1. **Set the switch lever in the OFF position.**



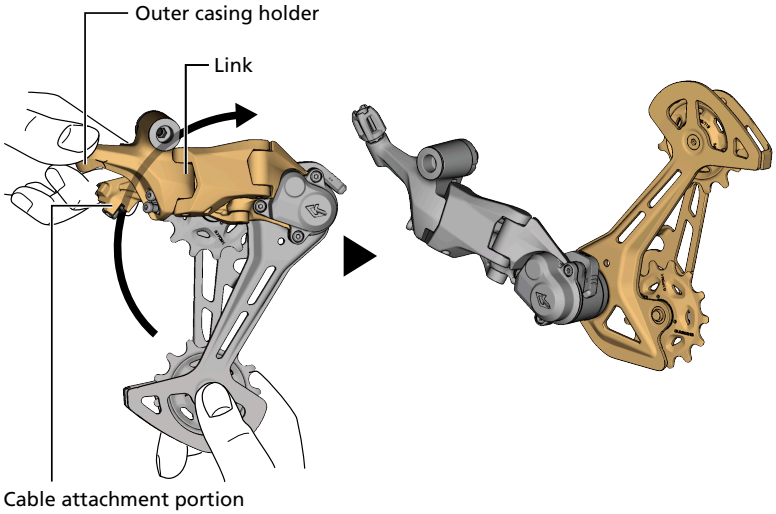
> **NOTICE**
>
> - If operating the switch lever while the plate unit cover is removed, hold the cam unit down with your finger so that it does not slide out.

2. **Remove the plate stopper pin.**

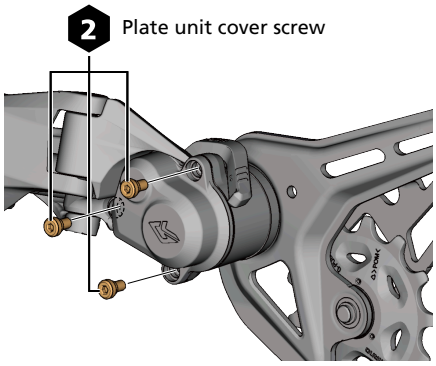


3. **Turn the plate to loosen the P-tension spring.**

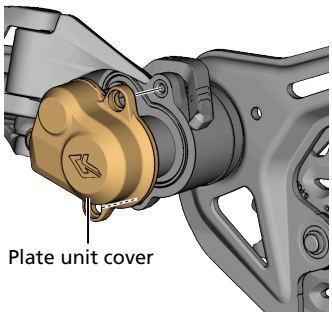
   As shown in the figure, squeeze the outer casing holder and cable attachment portion together to move the link and turn the plate.



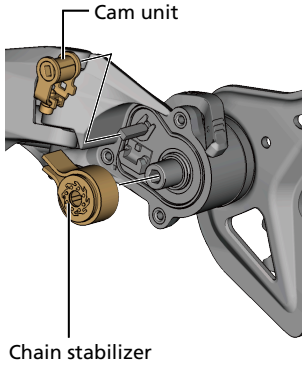
4. **Remove the plate unit cover screws.**



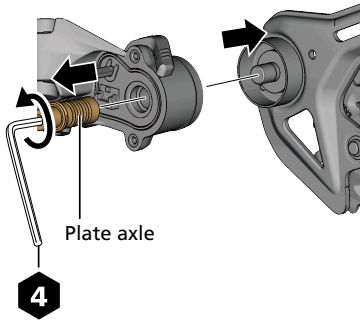
5. **Remove the plate unit cover.**



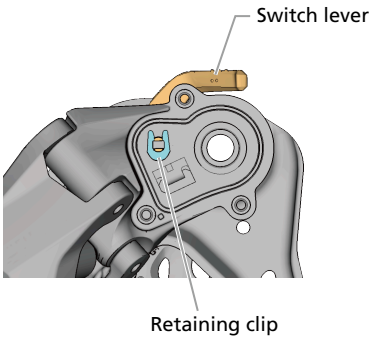
6. **Remove the chain stabilizer and cam unit.**

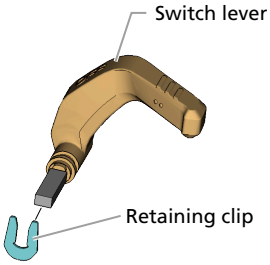


7. Remove the plate axle.

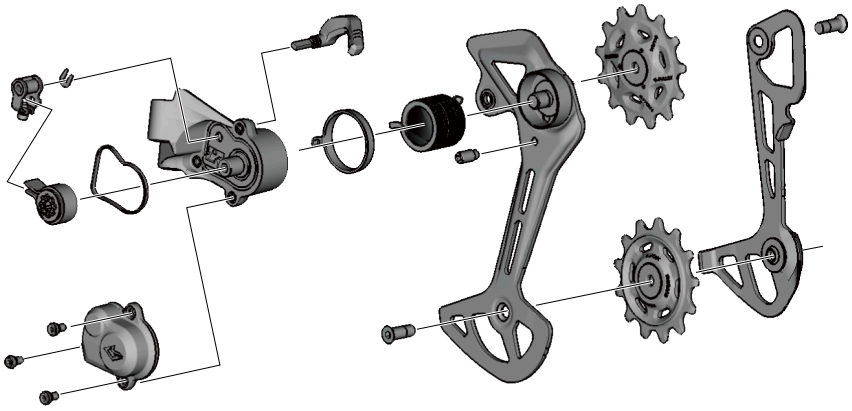


8. Remove the retaining clip and switch lever.





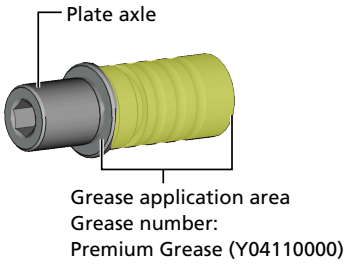
9. The unit can be disassembled as shown in the figure.



Installing the plate, P-tension spring, and switch lever

Perform the installation in the reverse order from Removing the plate, P-tension spring, and switch lever .

1. **Apply the dedicated grease to the plate axle.**

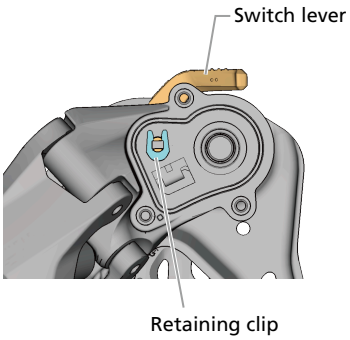


NOTICE

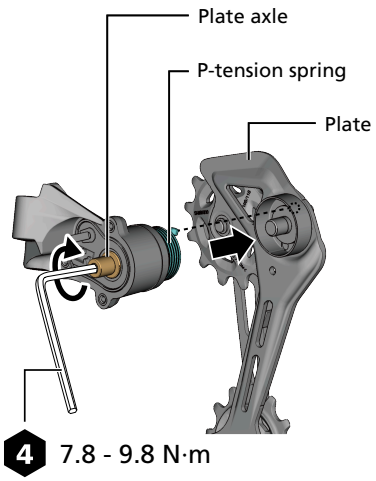
- Do not apply grease outside of the application area indicated above. If grease is applied here, it will get inside the roller clutch and friction will be lost.

2. **Install the switch lever and engage the retaining clip.**

   Set the switch lever in the OFF position.

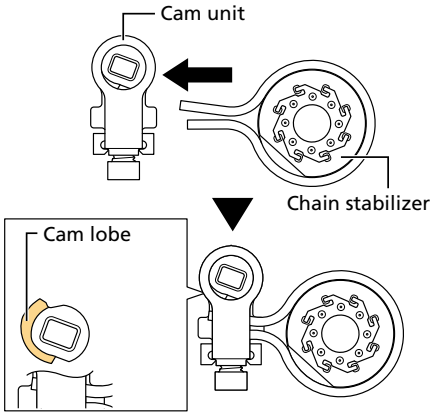


3. **Insert the plate axle, then fit the tip of the P-tension spring in the hole of the plate.**



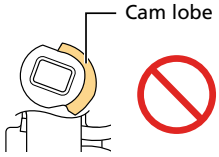
4. Set the chain stabilizer into the cam unit as shown in the figure.

Check that the cam lobe of the cam unit is in the position shown in the figure.



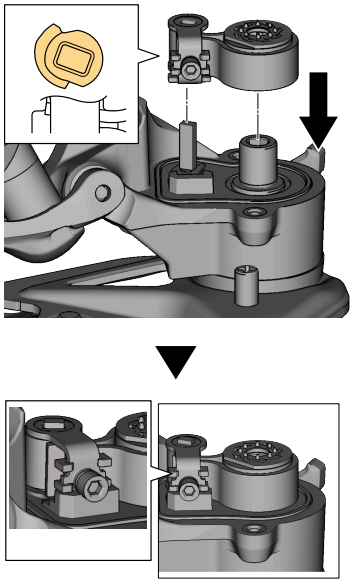
NOTICE

- Do not set the chain stabilizer in the cam unit with the cam lobe positioned as shown in the figure.



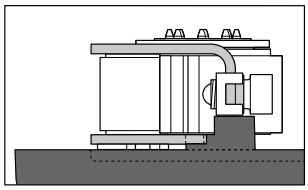
5. Install the cam unit and chain stabilizer.

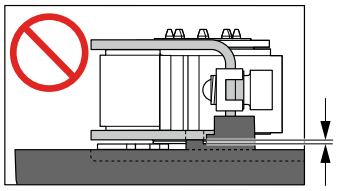
Pay attention to the positioning of the cam lobe of the cam unit.



NOTICE

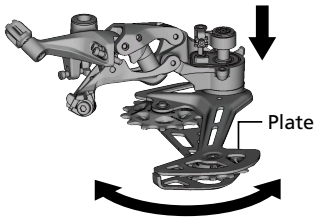
- Do not install the plate unit cover if the plate unit is not fully seated against the cam unit. This may result in insufficient sealing, which can lead to corrosion and malfunction of the chain stabilizer assembly.



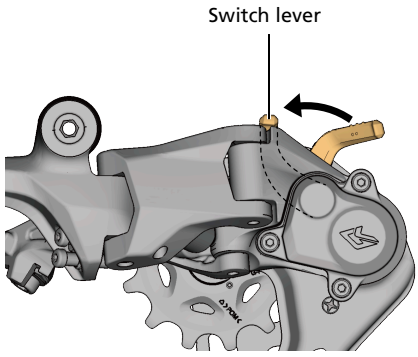


TECH TIPS

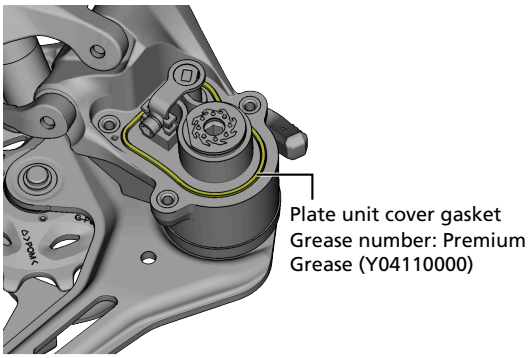
- When installing, it helps to move the plate back and forth while pushing on the cam unit and chain stabilizer.



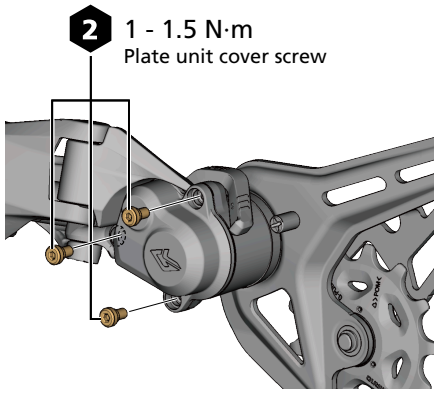
- If there is resistance when moving the switch lever to the ON position, the components are installed correctly. If there is no resistance, check the position of the cam lobe of the cam unit and reinstall the components.



6. **Apply the dedicated grease to the plate unit cover gasket and install.**
   Check that the plate unit cover gasket is installed along the groove in the plate unit.

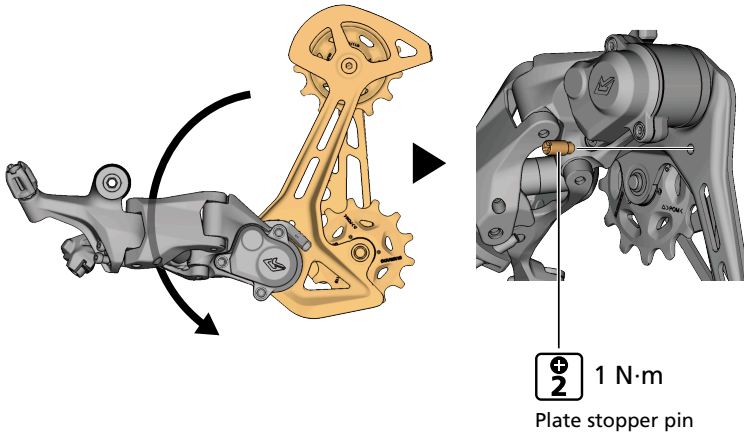


7. **Install the plate unit cover screws.**



8. **Install the plate stopper pin.**

   As shown in the figure, turn the plate counterclockwise, then install the plate stopper pin.



9. **Check the friction, and adjust as necessary.**

   Refer to " Adjusting friction " for the friction adjustment method.

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