

Dealer's Manual

ROAD	GRAVEL	MTB
E-BIKE	LIFESTYLE	GENERAL

Front Derailleur

SHIMANO 105

FD-R7100

GRX

FD-RX820

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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:

- 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:

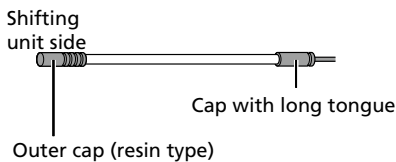
- If gear shifting operations do not feel smooth, wash the shifting unit and lubricate all moving parts.
- When the chain is in any of the positions shown in the figures, the chain may come into contact with the front chainring or front derailleur and generate noise. If noise is a problem, shift the rear sprocket to the next largest gear or the one after it.

	Double
Front chainring	
Rear sprocket	

- 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

- Use an OT-SP sealed cable and cable guide for smooth operation.
- 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.
- If using a full outer model, the end of the outer casing with the outer cap (resin type) should be on the shifting unit side.
- If using it in a cold region, use a sealed outer cap (resin type) to prevent freezing.







- If excess play in the links is so great that gear shifting adjustments cannot be made, replace the shifting unit.
- With a carbon frame, even the recommended tightening torque may be too tight and cause damage to the frame, or too loose and not sufficiently attached to the frame. For the appropriate torque value, consult with the manufacturer of the completed bicycle or the manufacturer of the frame.

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

List of tools to be used

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

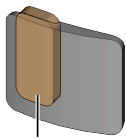
Tool	
	2 mm hexagon wrench
	4 mm hexagon wrench
	5 mm hexagon wrench
	Cutters

Installation/removal

Brazed-on type

Installing the support plate

If installing the front derailleur to a brazed-on type frame, a support plate must be installed to the seat tube. Be sure to install this in order to prevent damage to the frame from the pressure of the front derailleur support screw.



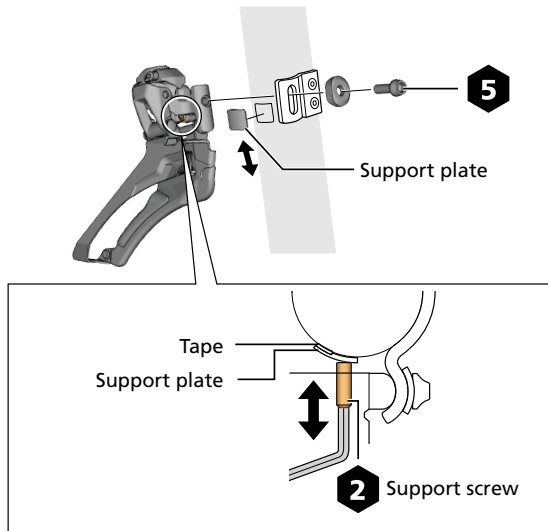
Tape

1. Check the installation position.

Check the position where the support screw directly touches the frame when the support screw of the front derailleur is being adjusted.

2. Install the support plate.

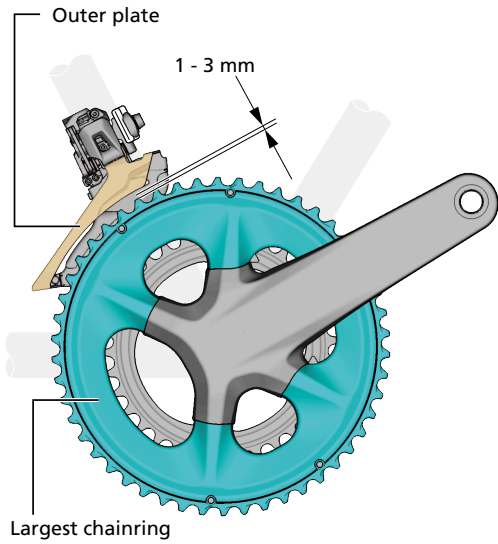
Avoid positioning the adhesive tape on the support plate between the contact point of the support screw and the frame.



Installing the front derailleur

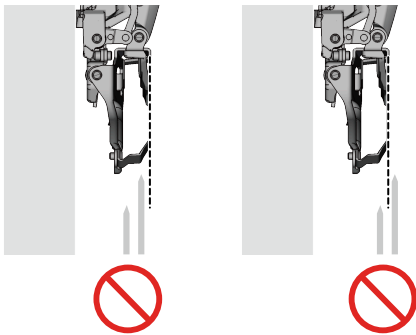
1. Adjust the installation height and temporarily attach the front derailleur to the frame.

Adjust the installation height so that the distance from the tips of the highest teeth of the largest chainring is 1 - 3 mm.



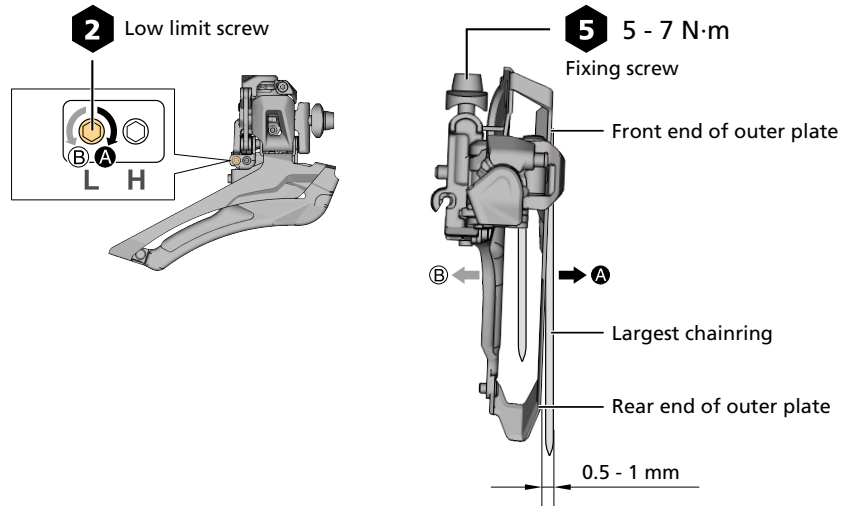
NOTICE

- Do not position the outer plate as shown in the figure.



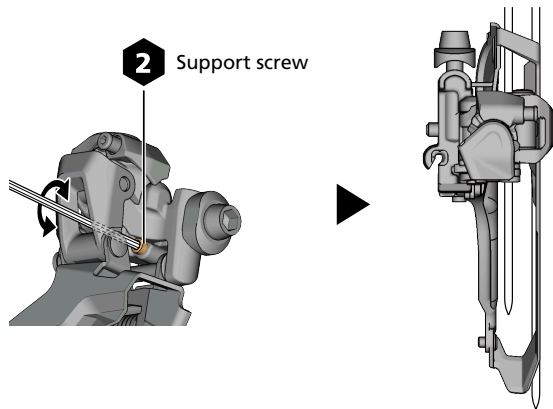
2. Adjust the installation angle and secure the front derailleur.

- (1) Perform adjustment so that the flat surface of the outer plate is in a position directly above the largest chainring and that the rear edge of the outer plate is inwards by 0.5 - 1 mm compared to the front edge.
- (2) Secure the front derailleur with a fixing screw or clamp screw.

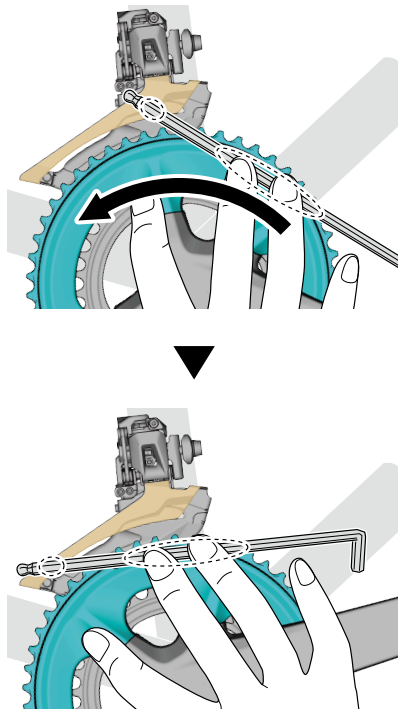


3. Readjust the outer plate position.

- (1) Adjust the support screw so that the flat surface of the outer plate is aligned with the surface of the largest chainring. Make sure that the support screw is in contact with the support plate.



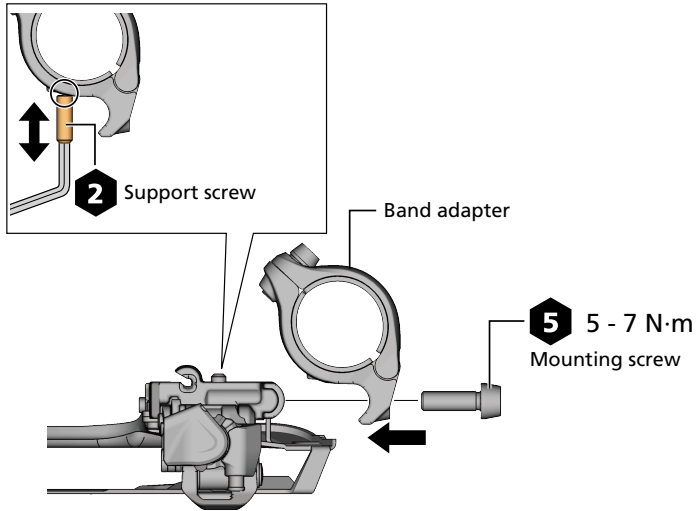
- (2) As shown in the figure, hold a tool such as a hexagon wrench against the flat surface of the largest chainring and make sure that the outer plate of the front derailleur is installed so that it is parallel with the chainring.



If using a band adapter (SM-AD91) to install the front derailleur

1. Install the band adapter (SM-AD91) to the front derailleur.

Touch the support screw to the band adapter.

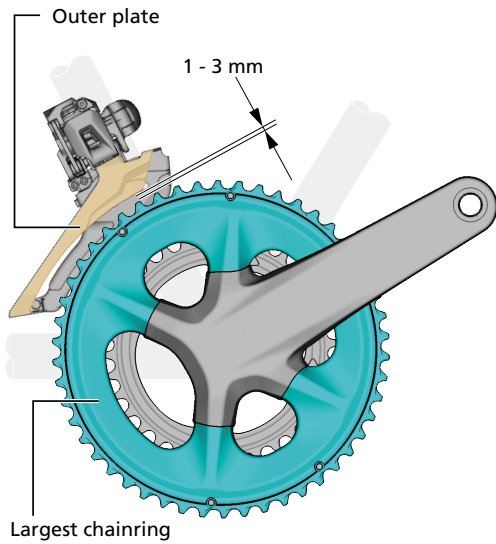


Refer to " Band type " for the subsequent procedures.

Band type

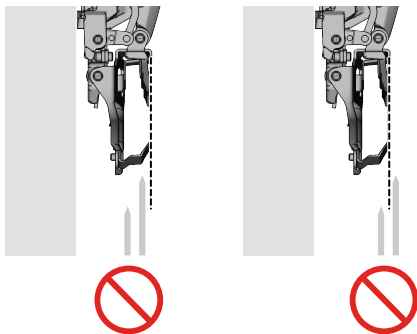
1. Adjust the installation height and temporarily attach the front derailleur to the frame.

Adjust the installation height so that the distance from the tips of the highest teeth of the largest chainring is 1 - 3 mm.



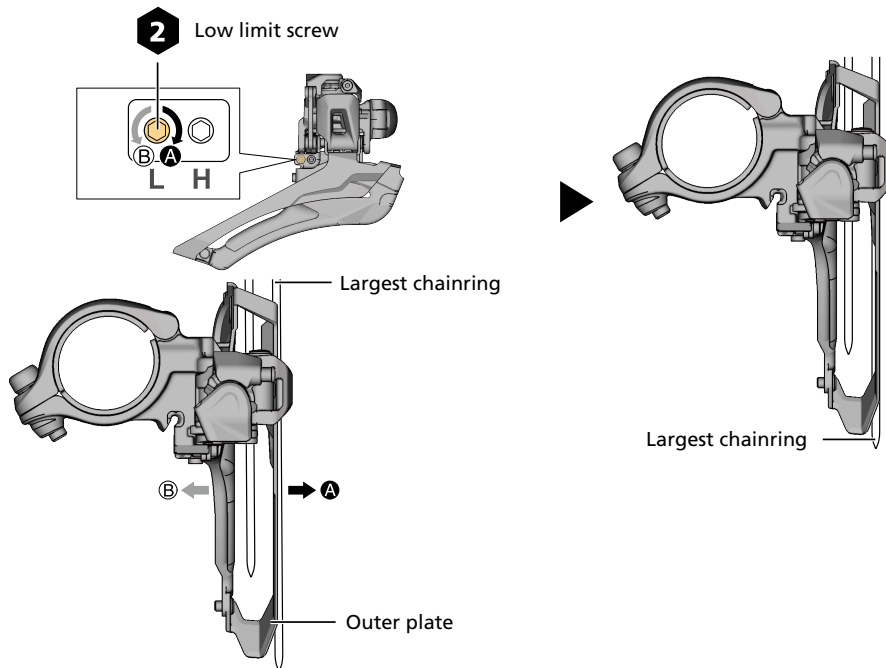
NOTICE

- Do not position the outer plate as shown in the figure.

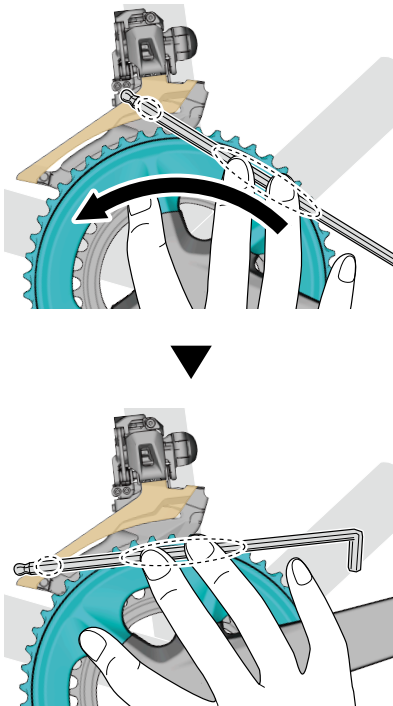


2. Adjust the position of the outer plate.

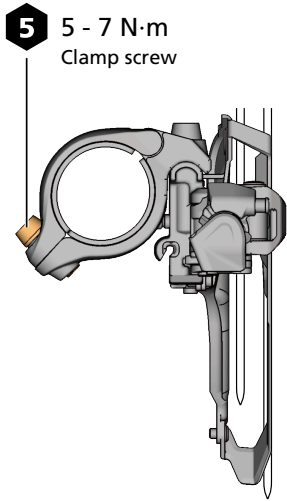
- (1) Use the low limit screw to align the flat portion of the outer plate with the surface of the largest chainring.



- (2) As shown in the figure, hold a tool such as a hexagon wrench against the flat surface of the largest chainring and make sure that the outer plate of the front derailleur is installed so that it is parallel with the chainring.



3. Secure the clamp screw.



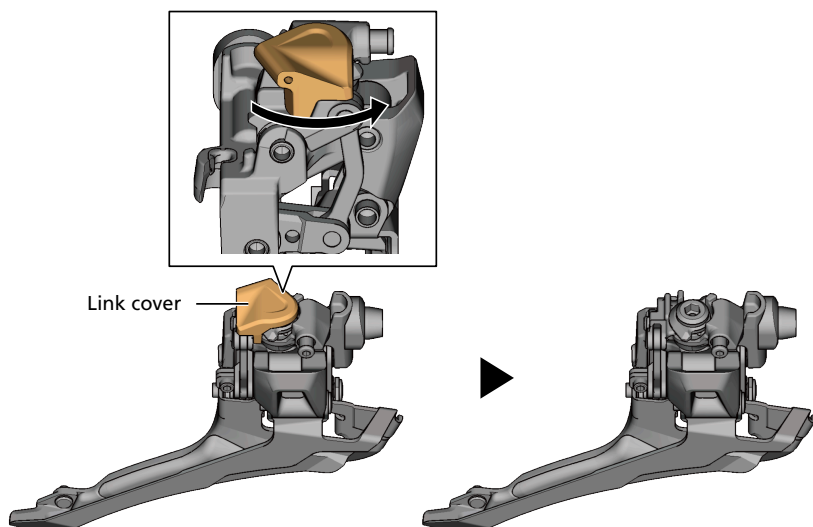
Adjustment

Installing the inner cable and adjusting gear shifting

Securing the cable

1. Operate the release levers on the dual control levers and set them to the initial positions (on the smallest chainring side).
2. Remove the link cover.

When removing the link cover, lift it up while rotating it in the direction of the arrow as shown in the figure.

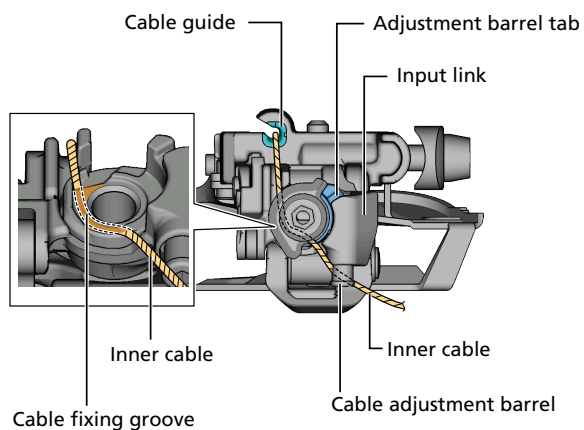


Adjustment

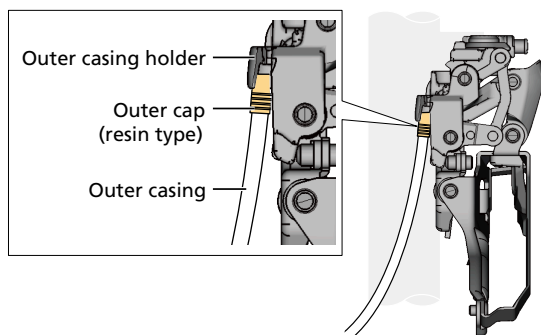
Installing the inner cable and adjusting gear shifting

3. Pass the inner cable through the front derailleur.

- (1) Use the low limit screw to align the flat portion of the outer plate with the surface of the largest chainring.
- (2) Confirm that the adjustment barrel tab is in contact with the input link.
 - * If it is not in contact, loosen the cable adjustment barrel until it is in contact with the input link.
- (3) Run the cable through the cable fixing groove as shown in the figure.

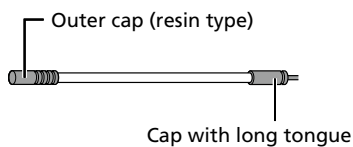


* For the full outer model and internal type, make sure that the outer casing is firmly secured to the outer casing holder before use.



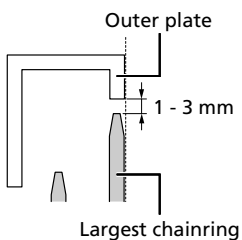
NOTICE

- Be sure to check that the inner cable runs through the cable guide.
- For bikes with full length outer casing, or bikes in which the outer casing meets the derailleur, use an outer cap (resin type) on the derailleur end of the outer casing.
- If using it in a cold region, use a sealed outer cap (resin type) to prevent freezing.



TECH TIPS

- Securing the cable while the outer plate is aligned with the largest chainring will decrease the amount of cable tension that needs to be added to achieve proper adjustment.



4. Temporarily secure the inner cable and remove the initial extension from the cable.

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

NOTICE

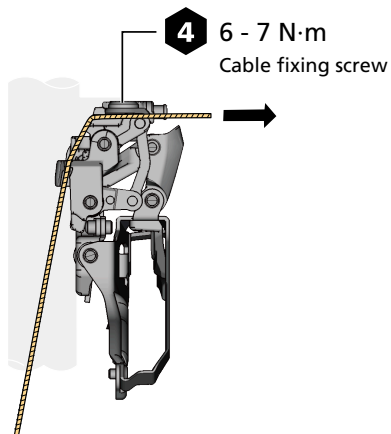
- Do not apply excessive force when operating the lever. Otherwise, the lever could malfunction.

Adjustment

Installing the inner cable and adjusting gear shifting

5. Secure the inner cable.

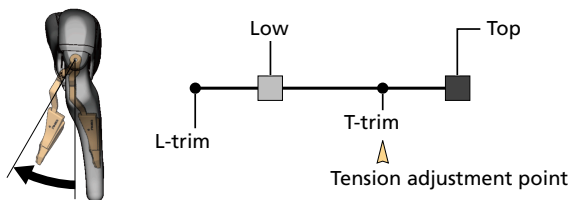
Secure while pulling the cable.



Adjusting the cable tension

Remove initial slack from the cable before adjusting cable tension.

1. Shift to the gear position where the lever is released from the top position to the T-trim position.



Adjustment

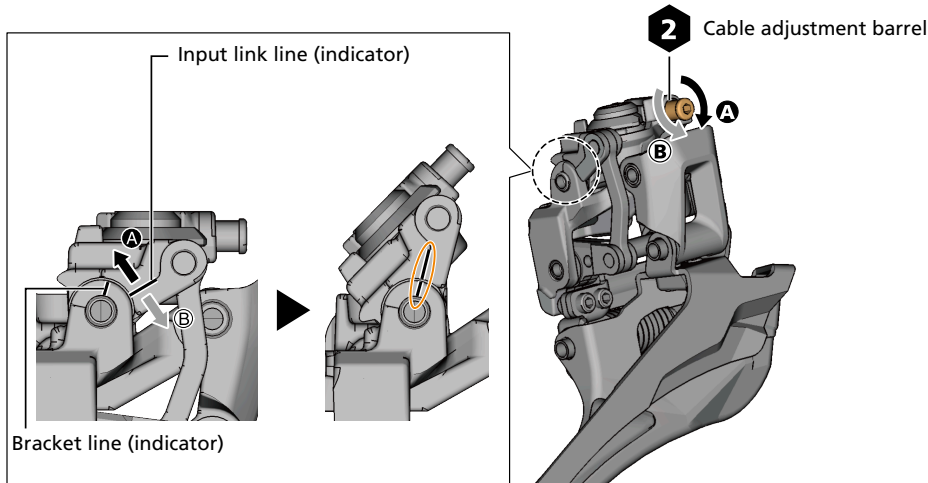
Installing the inner cable and adjusting gear shifting

2. Adjust the cable tension.

Adjust the cable tension with the cable adjustment barrel so that the indicator lines of the bracket and input link are aligned.

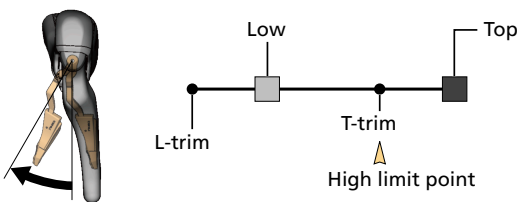
Whenever the screw is loosened, be sure to release once in the lowest position. Then, check the indicator position once again at the T-trim position.

Once the cable tension has been adjusted, install the chain.

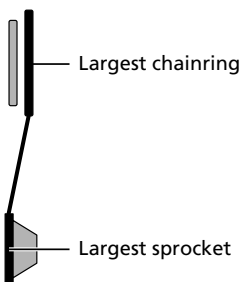


Adjusting the stroke on the high limit

1. Shift to the gear position where the lever is released from the top position to the T-trim position.



2. Shift the chain to the largest sprocket.

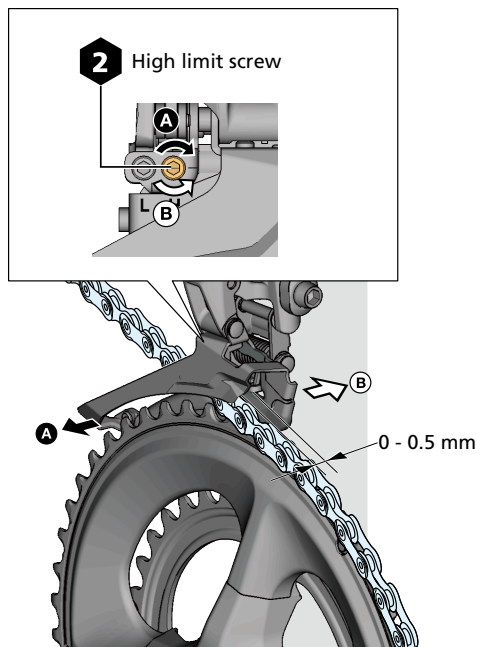


Adjustment

Installing the inner cable and adjusting gear shifting

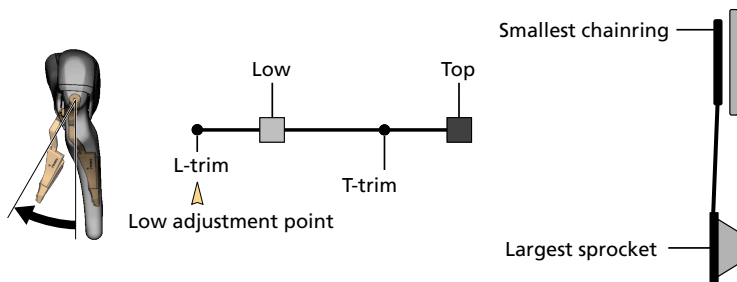
3. Adjust the top position of the front derailleur.

Adjust the gap between the inner plate and chain to 0 - 0.5 mm.



Adjusting the stroke on the low limit

1. Shift to the gear position where the lever is released from the low side to the L-trim position.

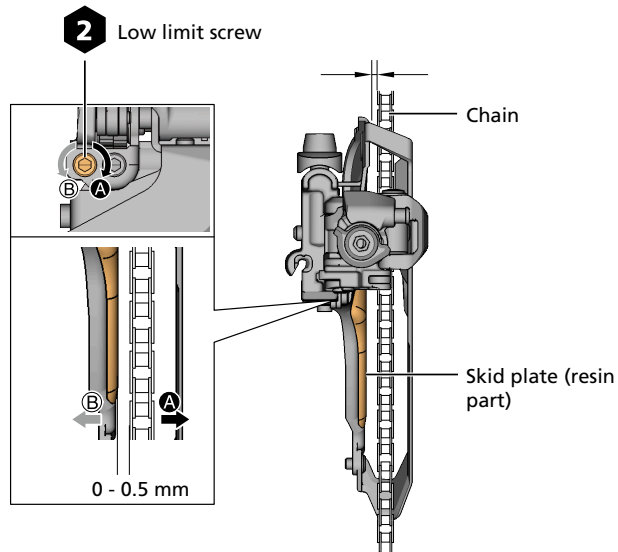


Adjustment

Installing the inner cable and adjusting gear shifting

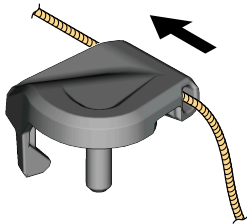
2. Adjust the low position of the front derailleur.

Adjust so that the gap between the skid plate and the chain is 0 - 0.5 mm.

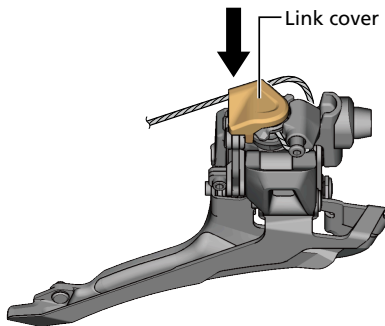


Handling the cable end

1. Run the end of any excessive cable through the hole in the link cover.



2. Install the link cover.

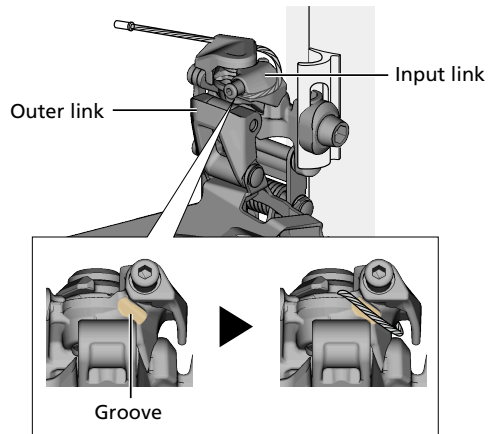


Adjustment

Installing the inner cable and adjusting gear shifting

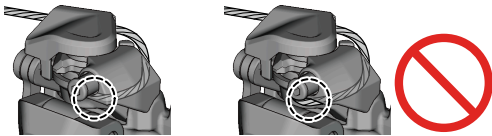
3. Run the cable through as shown in the figure.

Next, cut the cable and install an end cap.



NOTICE

- Check that the cable is not pinched in between the outer link and input link when the lever is released in the L-trim position.



Checking gear shifting and fine adjustment

After the cable is installed and adjusted, operate the shift lever to check the gear shifting performance.

First, check whether the tension of the cable is appropriate using the indicator.

If the chain falls to the crank side	Turn the high limit screw counterclockwise.
If shifting is difficult from the smallest chainring to the largest chainring	Turn the high limit screw clockwise.
If shifting is difficult from the largest chainring to the smallest chainring	Turn the high limit screw counterclockwise.
If the chain falls to the bottom bracket side when the gear is shifted to the lowest position	Turn the high limit screw clockwise.
If the chain falls to the bottom bracket side when the gear is shifted to the L-trim position	Turn the low limit screw clockwise.

NOTICE

- If gear shifting becomes difficult during use, be sure to check that the cable tension is correct using the indicator.

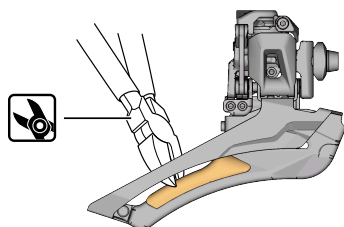
Maintenance

Replacing the skid plate

Removing the skid plate

1. Remove the skid plate.

Make a slit in the skid plate at the position illustrated using cutters, then remove the skid plate.



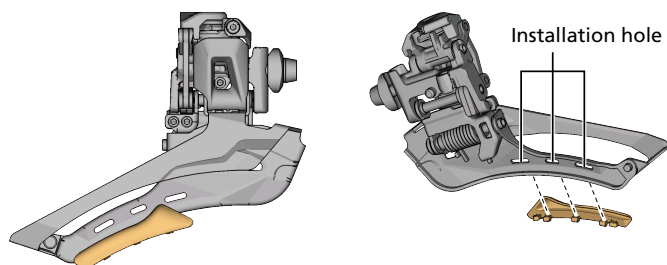
NOTICE

- The skid plate on the outer plate side cannot be replaced.

Installing the skid plate

1. Install a new skid plate.

- (1) Insert the skid plate into the installation holes.
- (2) Check that the claws on the skid plate are engaged properly on the back side of the inner plate.



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