

Dealer's Manual

ROAD	MTB	Trekking
City Touring/ Comfort Bike	URBAN SPORT	E-BIKE

FRONT DERAILLEUR

XTR
FD-M9100

CONTENTS

CONTENTS	2
IMPORTANT NOTICE	3
TO ENSURE SAFETY	4
LIST OF TOOLS TO BE USED	6
INSTALLATION/REMOVAL	7
Installing the front derailleur.....	7
• Installing on bicycles with rear suspension.....	7
• Band type.....	8
• Direct mount type	10
• E Type	13
ADJUSTMENT	15
Installing the inner cable and adjusting the shifting operation.....	15
• Adjusting the position of the low side	15
• Connection and securing of the inner cable	16
• Adjusting the cable tension.....	17
• Adjusting the top side.....	18
• Checking gear shifting and fine tuning.....	19
MAINTENANCE.....	20
Replacing the chain catcher.....	20
• Removal	20
• Installation	20
Replacing rubber pad A.....	22
• Removal	22
• Installation	23
Replacing rubber pad B	24
• Removal	24
• Installation	24
Replacing the cover with tongue.....	25
• Removal	25
• Installation	25

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, consult a place of purchase or a distributor for their assistance.
- Make sure to read all instruction manuals included with the product.
- Do not disassemble or modify the product other than as stated in the information contained in this dealer's manual.
- All dealer's manuals and instruction manuals can be viewed on-line on our website (<http://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 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.**
It is recommended to use SHIMANO genuine parts only. If parts such as bolts and nuts become loose or damaged, the bicycle may suddenly fall over, which may cause serious injury.
In addition, if adjustments are not carried out correctly, problems may occur, and the bicycle may suddenly fall over, which may cause serious injury.
-  Be sure to wear safety glasses or goggles to protect your eyes while performing maintenance tasks such as replacing parts.
- After reading the dealer's manual thoroughly, keep it in a safe place for later reference.

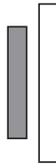
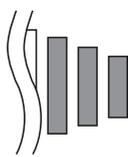
Be sure to also inform users of the following:

- 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 derailleur 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 (11-speed/12-speed)
Front chainring	
Rear sprocket	

For installation to the bicycle, and maintenance:

- For frames with suspension, the chainstay angle will vary depending on whether the bicycle is being ridden or not being ridden.
- When the bicycle is not being ridden and the chain is positioned on the front largest chainring and the rear smallest sprocket, the chain guide outer plate of the front derailleur may touch the chain.
- Use an OT-SP41 outer casing and a cable guide (SM-SP17/SP18) for smooth operation.
- If looseness in the links is so great that gear shifting adjustments cannot be made, replace the derailleur.
- 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.

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/removal, adjustment, and maintenance purposes.

Tool	
	2 mm hexagon wrench
	4 mm hexagon wrench
	Hexalobular [#10]

INSTALLATION/REMOVAL

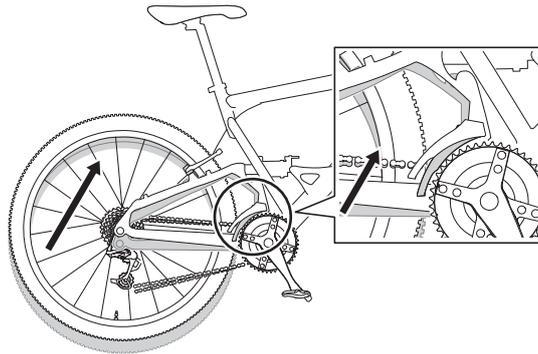
Installing the front derailleur

NOTE/ICE

- When installing parts on a carbon frame/handlebars, confirm the recommended tightening torque with the carbon frame or part manufacturer in order to prevent damage to the carbon material due to overtightening or inadequate securing of the components due to insufficient tightening torque.

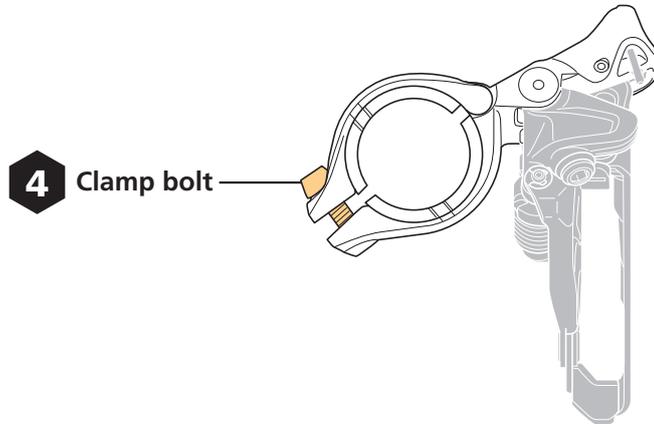
Installing on bicycles with rear suspension

The position of bicycles with rear suspension may differ depending on whether a rider is on or off the bicycle. For the installation and SIS adjustment procedures, refer to the figure and secure the bicycle in the state it is in when a rider is on the bicycle.



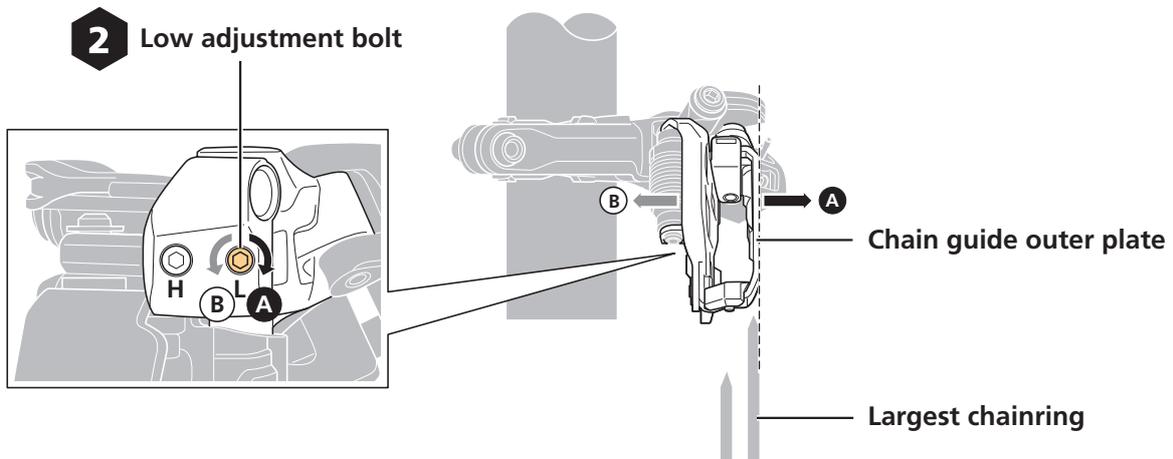
Band type

1. Temporarily install the clamp bolt.



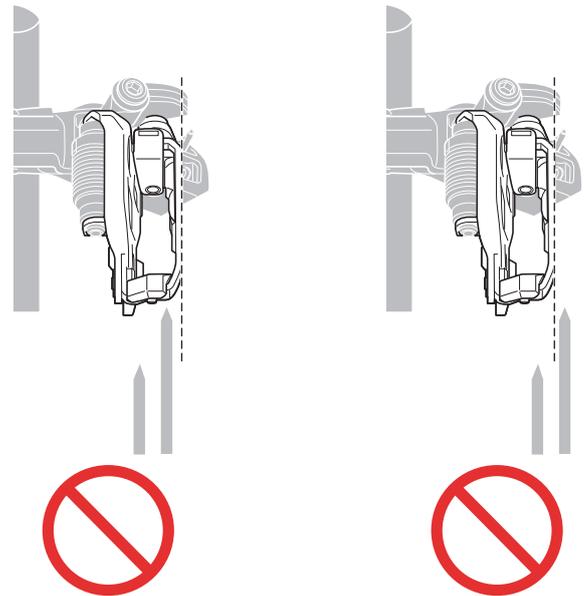
2. Adjust the position of the chain guide.

Use the low adjustment bolt to align the chain guide outer plate with the flat surface of the largest chainring.



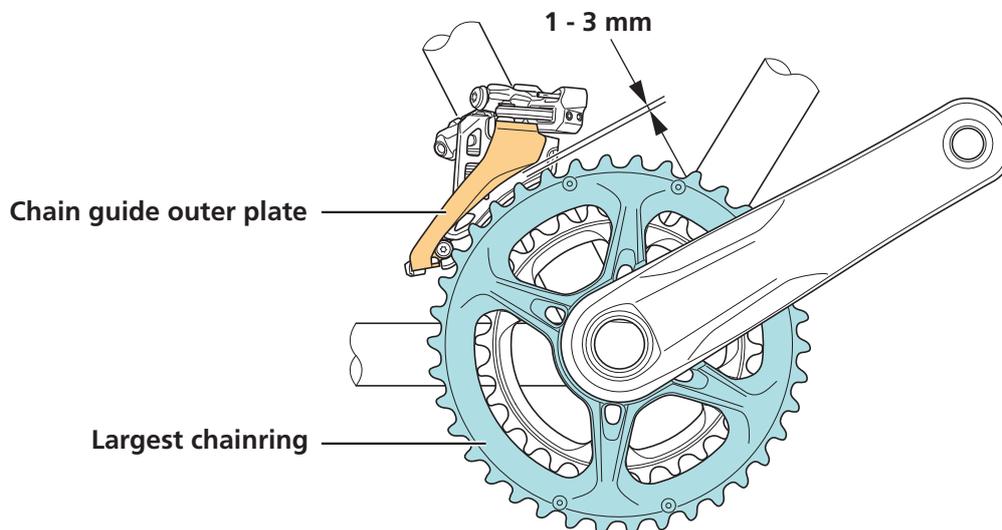
NOTEICE

- Do not position the chain guide as shown in the figure.



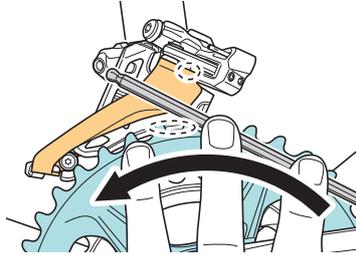
3. Adjust the height.

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

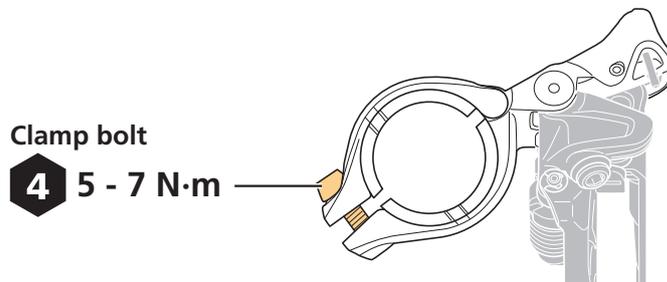


4. Adjust the installation position.

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 front derailleur is installed so that it is parallel with the front chainring.

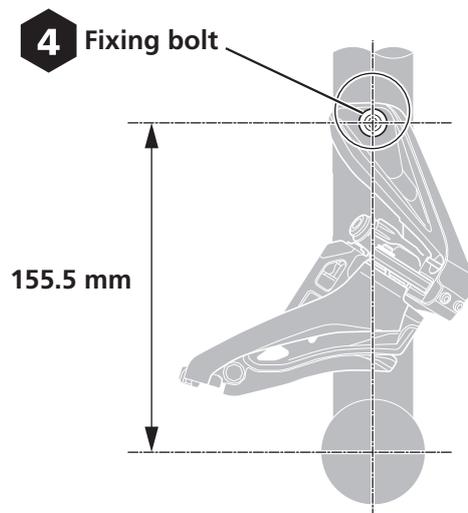


5. Secure the clamp bolt.



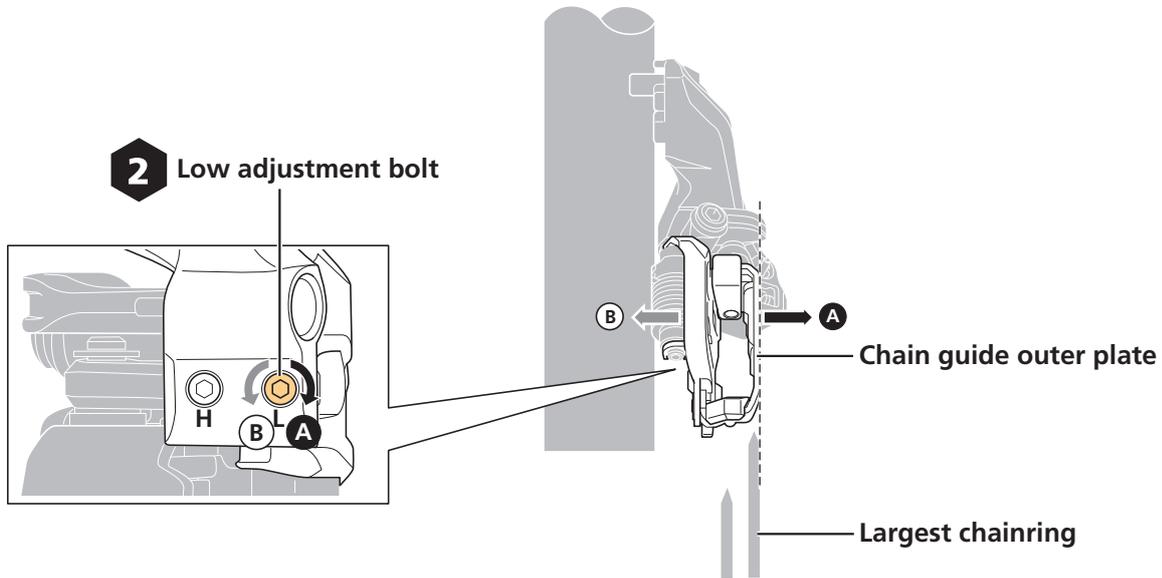
Direct mount type

1. Temporarily install the front derailleur to the frame.



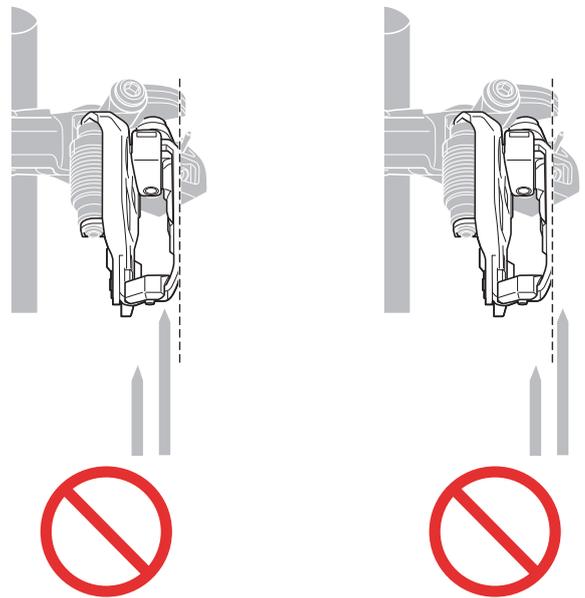
2. Adjust the position of the chain guide.

Use the low adjustment bolt to align the chain guide outer plate with the flat surface of the largest chainring.



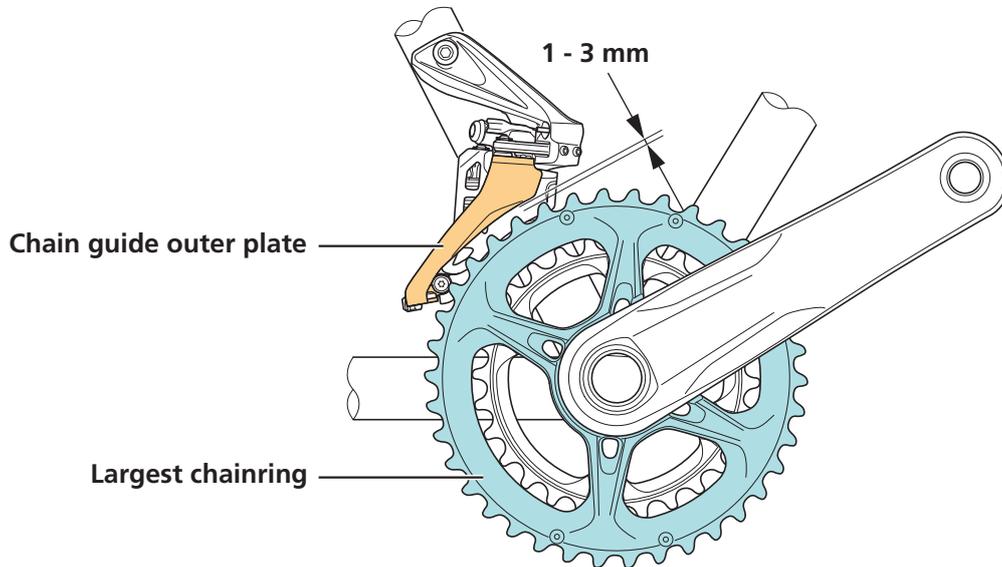
NOTEICE

- Do not position the chain guide as shown in the figure.



3. Adjust the height.

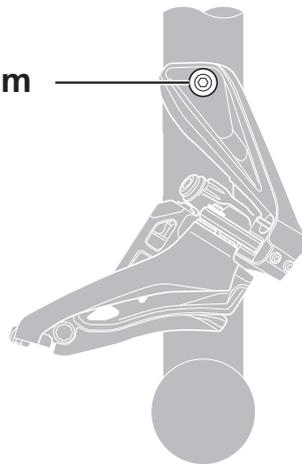
Adjust the installation height so that the distance from the tips of the teeth on the largest chainring is 1 - 3 mm.



4. Secure the front derailleur to the frame.

Fixing bolt

4 5 - 7 N·m

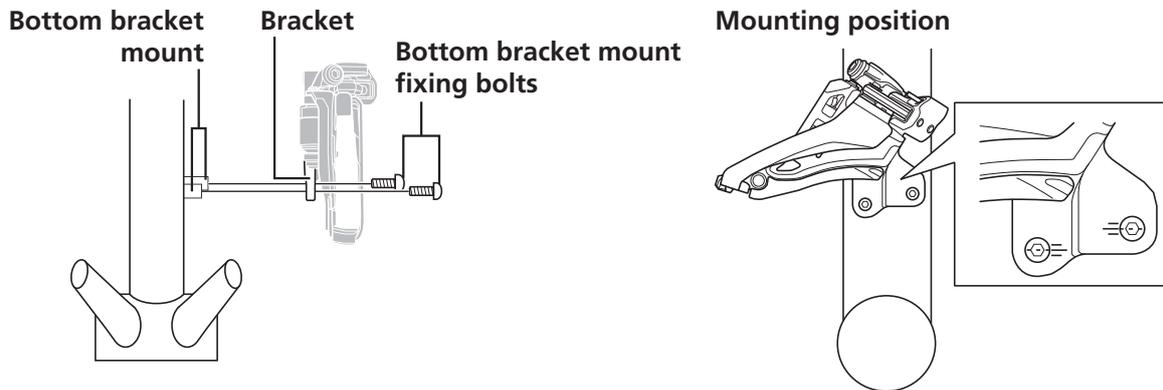


E Type

1. Temporarily install the front derailleur to the frame.

Secure with the bottom bracket mount fixing bolts.

Refer to the figure for the fixing position.

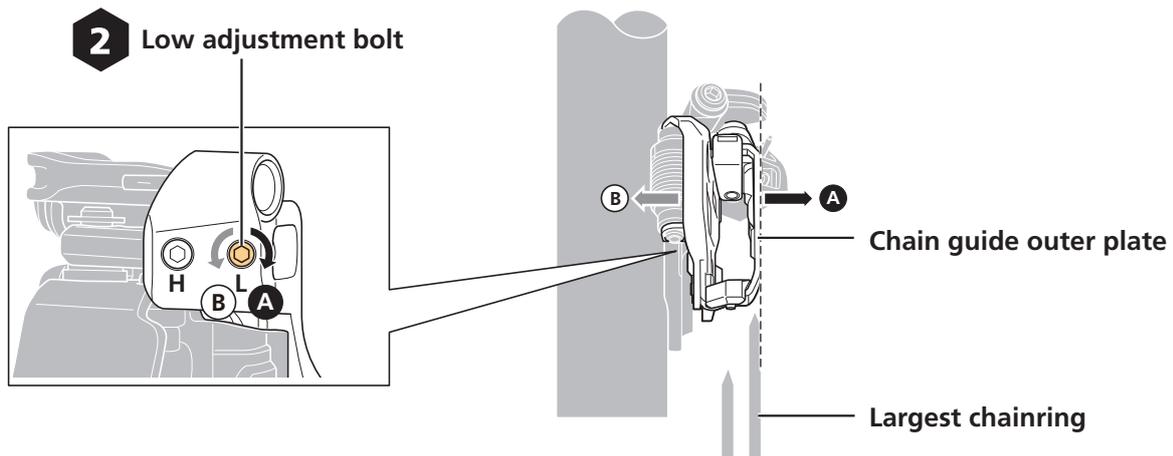


NOTEICE

- The bottom bracket mount fixing bolts are not included with SHIMANO components.

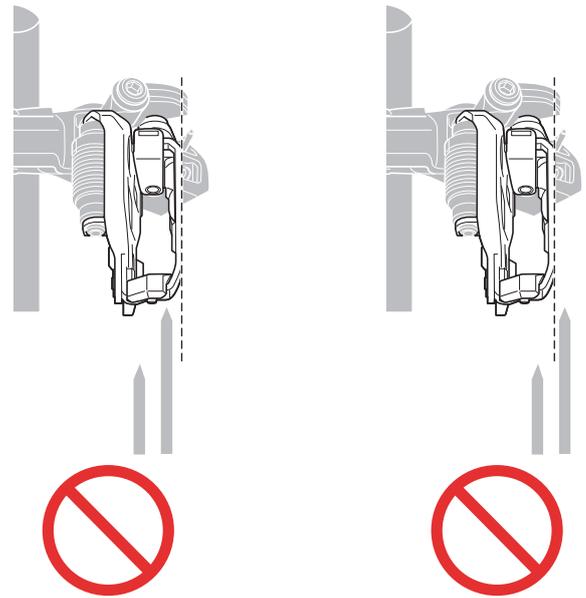
2. Adjust the position of the chain guide.

Use the low adjustment bolt to align the chain guide outer plate with the flat surface of the largest chainring.



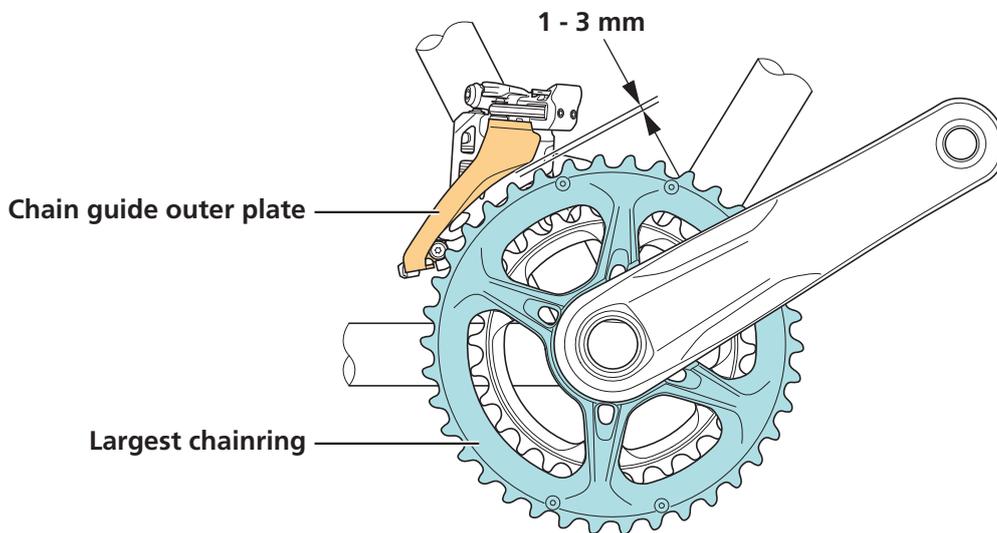
NOTEICE

- Do not position the chain guide as shown in the figure.



3. Adjust the height.

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



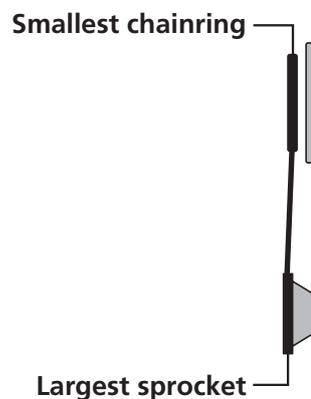
4. Secure the front derailleur to the frame.

ADJUSTMENT

Installing the inner cable and adjusting the shifting operation

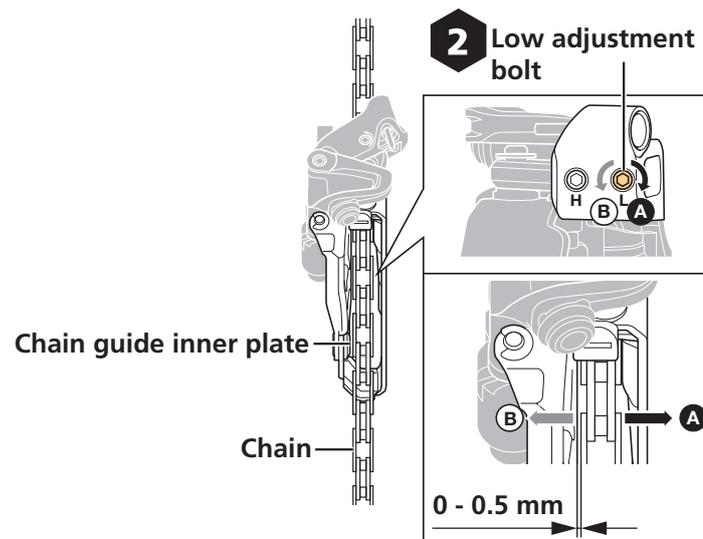
Adjusting the position of the low side

1. Adjust the chain to the smallest chainring and the largest sprocket.



2. Adjust the low position of the chain guide.

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

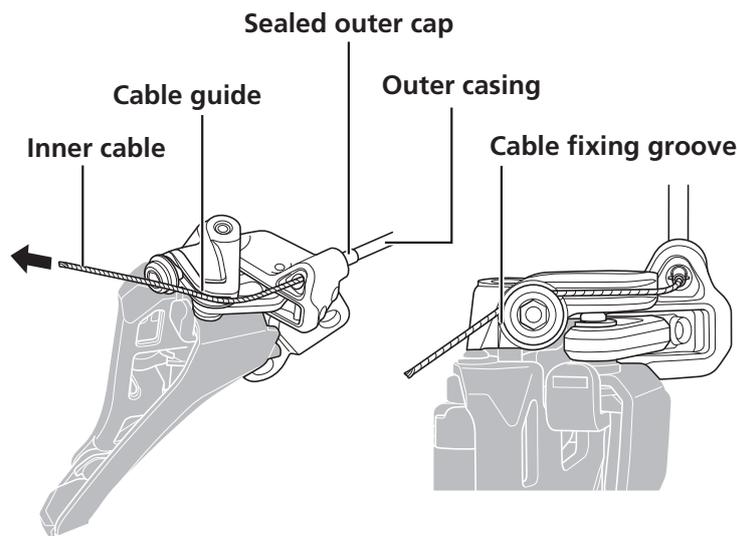


Connection and securing of the inner cable

1. Operate the release lever of the shifting lever and set it to the initial position (smallest chainring side).
2. Pass the inner cable through the front derailleur.

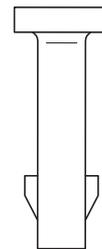
Pass the cable through the cable guide and along the cable fixing groove.

The cable fixing groove is located on the inner side of the inner cable fixing bolt.



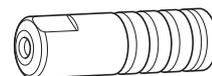
NOTEICE

- Replacing the cover with tongue is recommended when replacing the inner cable. Refer to "MAINTENANCE" for the replacement method.



Cover with tongue

- Fuzz may be generated when the inner cable is assembled or when the coating is damaged during use; however, this will not affect performance.
- If the outer casing moves to a large degree, such as in bicycles with suspension frames, it is recommended that you use an aluminum type sealed outer cap.

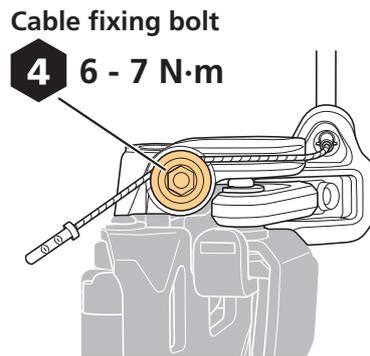


Sealed outer cap



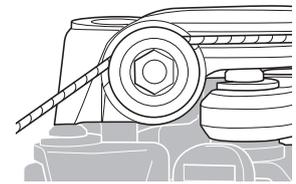
Sealed outer cap (aluminum type)

3. Secure the inner cable.



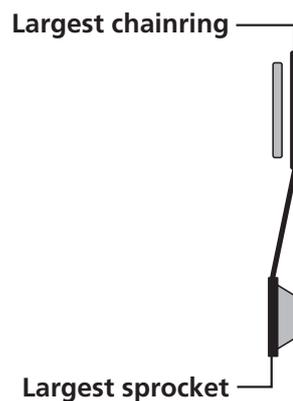
NOTEICE

- Be sure to pass the inner cable along the cable fixing groove as shown in the figure. If the cable is not distributed along the groove, the gear shifting performance may become obstructed due a reduction in the holding force, etc.



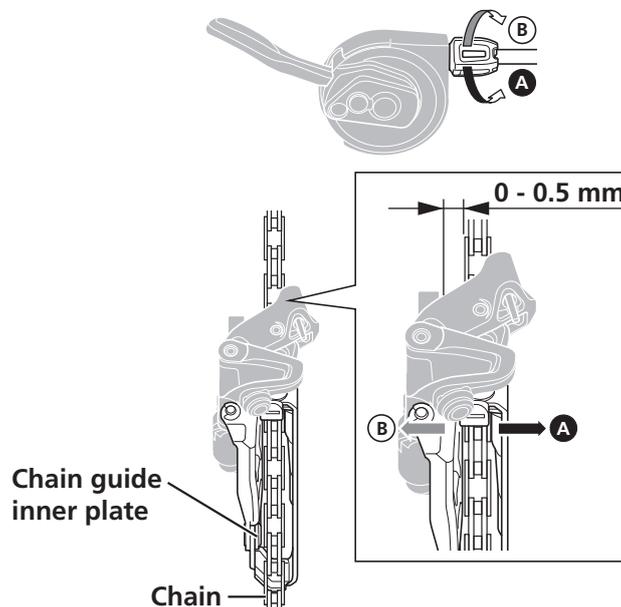
Adjusting the cable tension

1. Adjust the chain to the largest chainring and the largest sprocket.



2. Adjust the position of the chain guide.

Adjust the gap between the chain guide inner plate and the chain to 0 - 0.5 mm with the cable adjuster.

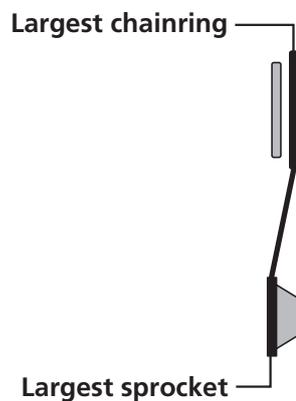


TECH TIPS

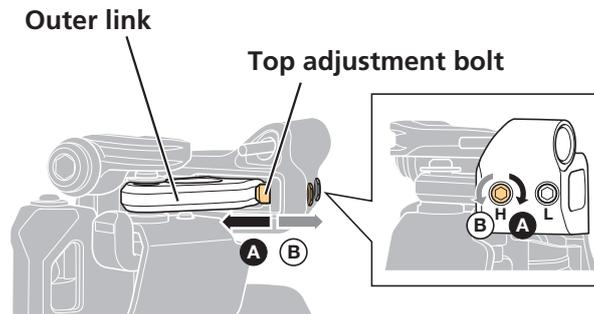
- Operate the lever once after adjusting with the cable adjuster and re-check the gap.

Adjusting the top side

1. Adjust the chain to the largest chainring and the largest sprocket.



2. Tighten the top adjustment bolt until the top adjustment bolt is slightly touching the outer link.



Checking gear shifting and fine tuning

After the cable is installed and adjusted, operate the shifting lever to check the gear shifting performance. (This also applies if shifting becomes difficult during use.)

Refer to the table when fine tuning. Turn 1/8 of a turn for each adjustment.

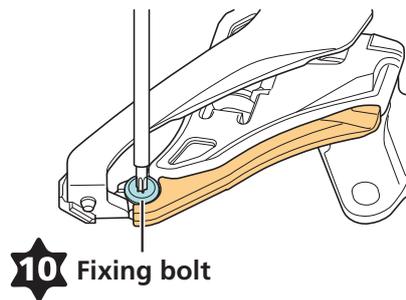
If the chain falls to the crank side	Turn the top adjustment bolt clockwise.
If it is difficult to shift from the smallest chainring to the largest chainring	Tighten the cable. If this does not improve the situation, turn the top adjustment bolt counterclockwise.
If it is difficult to shift from the largest chainring to the smallest chainring	Turn the low adjustment bolt counterclockwise. If this does not improve the situation, loosen the cable.
If the chain falls to the bottom bracket side	Turn the low adjustment bolt clockwise.

MAINTENANCE

Replacing the chain catcher

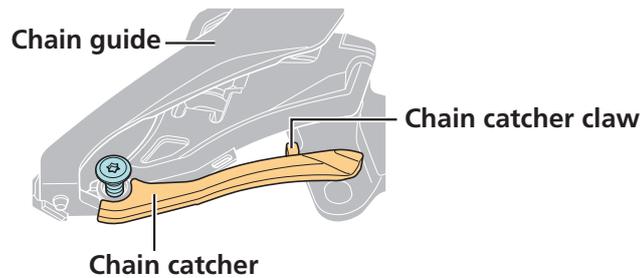
Removal

1. Remove the fixing bolt.



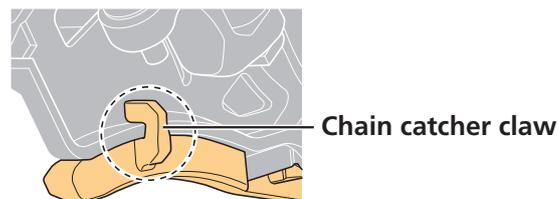
Installation

1. Temporarily install the chain catcher to the chain guide.



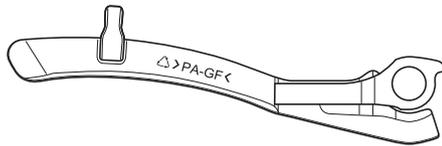
2. Install the claw of the chain catcher.

Install the claw securely as shown in the figure.

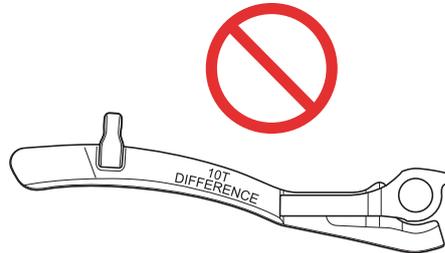


NOTEICE

- The shape of the chain catcher may differ depending on the model. Be sure to use a compatible chain catcher.

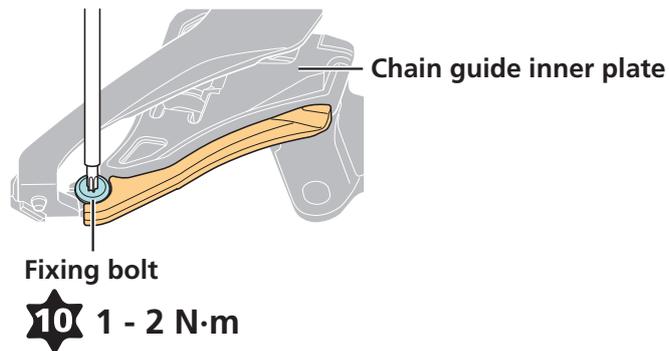


Chain catcher for 12-speed



Chain catcher with 10T DIFFERENCE marking

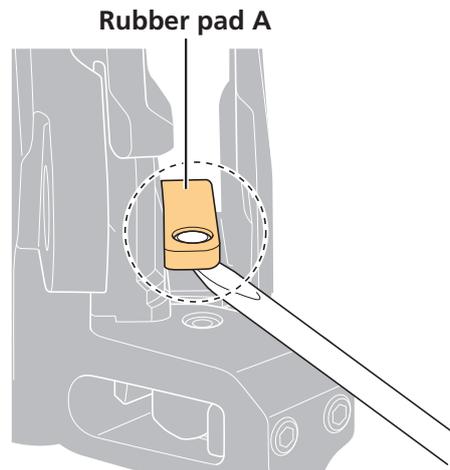
3. Secure the chain catcher along the chain guide inner plate.



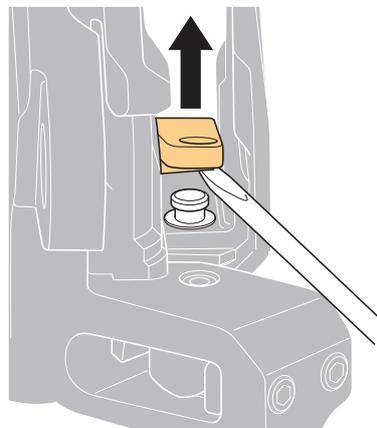
Replacing rubber pad A

Removal

1. Insert a tool such as a small slotted screwdriver into the gap.



2. Lift upward to remove the pad.



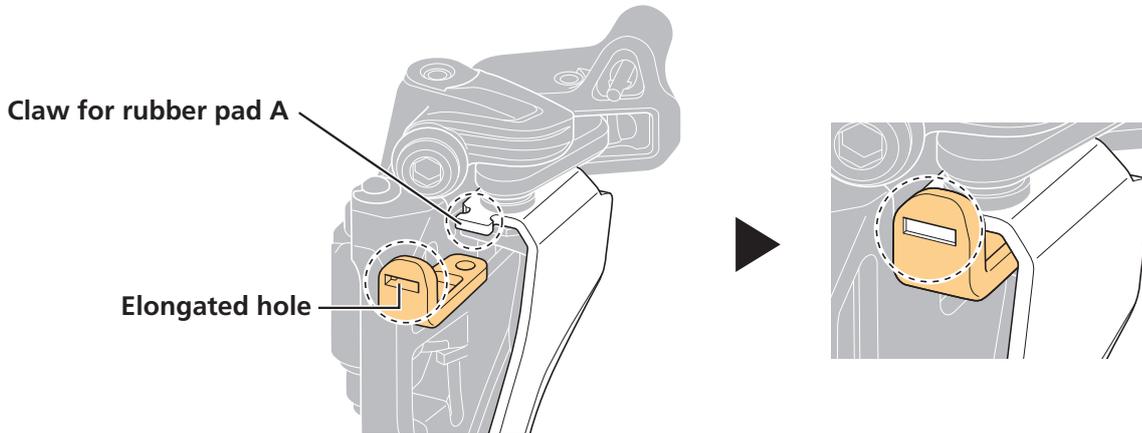
NOTEICE

- When removing rubber pad A, do not apply excessive force. Doing so may damage the chain guide or cause unexpected injuries.
- Do not reuse rubber pads that have been removed. Such pads are likely to become detached due to deformation, etc.

Installation

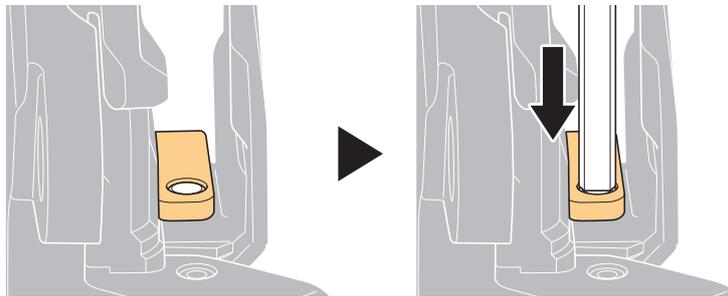
1. Fit the elongated hole onto the claw for rubber pad A.

Securely fit rubber pad A all the way onto the claw.



2. Fit rubber pad A securely in the chain guide.

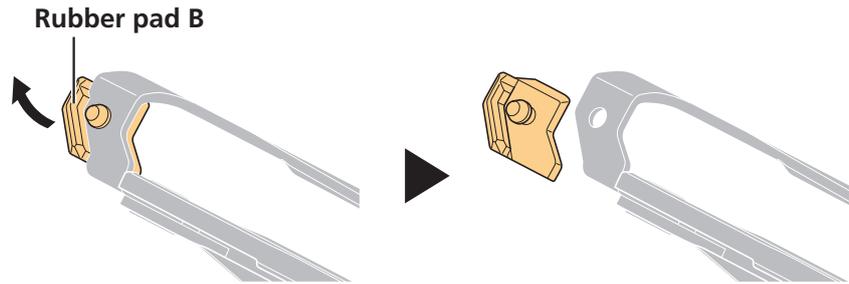
Align the hole of rubber pad A with the protrusion of the chain guide, and then lightly push rubber pad A in with a tool such as an 8 mm hexagon wrench.



Replacing rubber pad B

Removal

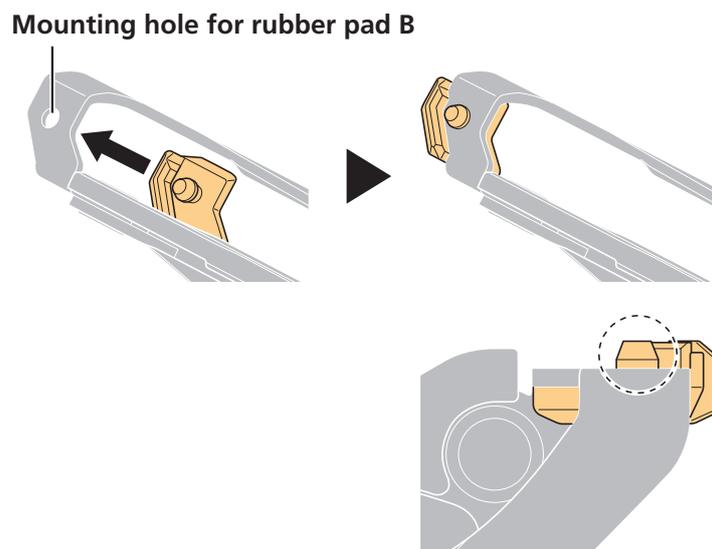
1. Peel back and remove rubber pad B from the inner side of the chain guide.



Installation

1. Align in the installation position as shown in the figure, and then push in rubber pad B to install it.

Make sure that the protrusion of rubber pad B fits securely into the chain guide.

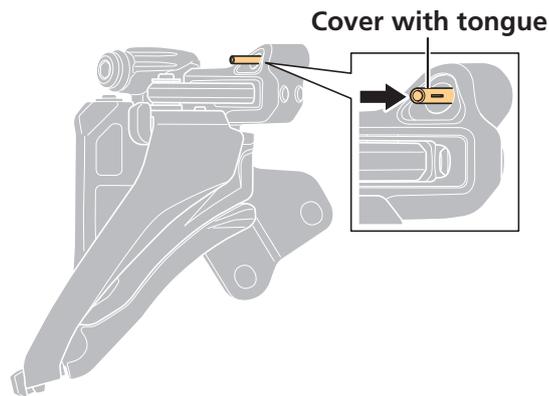


Replacing the cover with tongue

Removal

1. Remove the cover with tongue from the bracket.

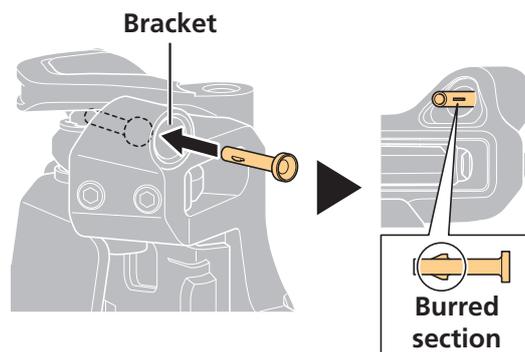
Push the cover with tongue in the direction of the arrow shown in the figure to remove it.



Installation

1. Install a new cover with tongue in the bracket.

Push in the cover with tongue until the burred section is visible.



SHIMANO

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Please note: specifications are subject to change for improvement without notice. (English)

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