

## **Dealer's Manual**

# **Dual Pivot Caliper Brake**

BR-4700

BR-4600

BR-3500

BR-2400

BL-R780

BL-4700

BL-4600

BL-3500

BL-2400

## 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 local bicycle dealer 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

- **When installing components, be sure to follow the instructions that are given in the instruction manuals.**

It is recommended to use genuine Shimano 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:

- Each bicycle may handle differently depending on the product. Therefore, it is important to completely understand and get used to the operation of your bicycle's brake system (including brake lever pressure and bicycle control characteristics). Improper use of your bicycle's brake system may result in a loss of control or a fall, which could lead to severe injury. For proper operation please consult a professional bicycle dealer, or read the owner's manual. It is important to ride your bicycle and practice braking operation and other basic features, etc.
- If the front brake is applied too strongly, the wheel may lock and the bicycle may fall forward, and serious injury may result.
- Always make sure that the front and rear brakes are working correctly before riding the bicycle.
- The required braking distance will be longer during wet weather. Reduce your speed and apply the brakes early and gently.
- If the road surface is wet, the tires will skid more easily. If the tires skid, you may fall off the bicycle. To avoid this, reduce your speed and apply the brakes early and gently.
- Be careful not to allow any oil or grease to get onto the brake shoes. If any oil or grease does get on the shoes, contact the place of purchase or a bicycle dealer. Otherwise the brakes may not work correctly.
- Check the brake cable for rust, fraying, and cracks, and contact the place of purchase or a bicycle dealer if any such problems are found. Otherwise, the brakes may not work correctly.

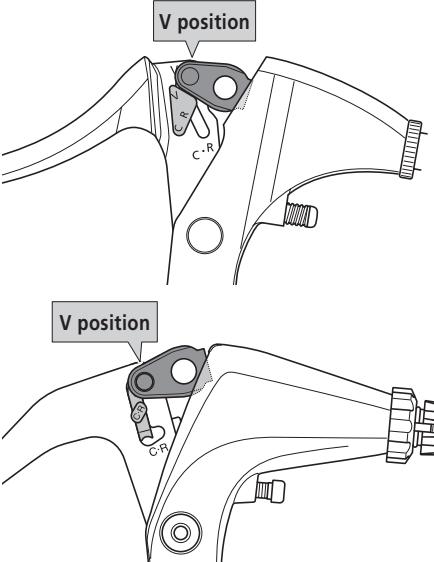
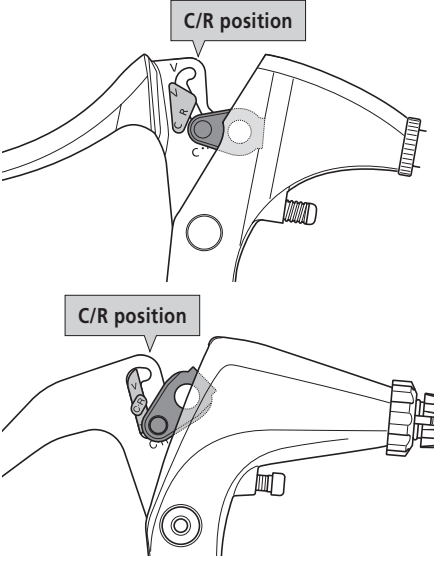
**For Installation to the Bicycle, and Maintenance:**

**<BL-4700/4600/3500/2400/R780>**

- The brake levers are equipped with a mode switching mechanism to make them compatible with V-BRAKE brakes, caliper brakes, cantilever brakes and road mechanical disc brakes.
- \* The mode switching mechanism differs depending on the model.


**If the incorrect mode is selected it may cause either excessive or insufficient braking force to occur, which could result in dangerous accidents. Be sure to select the mode in accordance with the instructions given in the mode switching table.**

**Mode switching table**

Mode position	Applicable brake
<div><p><b>V</b> : Mode position for compatibility with V-BRAKE</p></div>	<ul style="list-style-type: none"><li>• V-BRAKE</li></ul>
<div><p><b>C</b> : Mode position for compatibility with caliper brakes and cantilever brakes <b>R</b> : Mode position for compatibility with road mechanical disc brakes</p></div>	<ul style="list-style-type: none"><li>• Caliper brakes</li><li>• Cantilever brakes</li><li>• Road mechanical disc brakes</li></ul>

- For BR-4700/4600/3500/2400, use the dual control lever or brake lever according to the combination specified in the following table. Do not use the combinations with "NO!" indication in the table.

The brakes may be excessively effective, and you may fall.

Brake caliper	Combinations	Dual control lever	Brake lever
BR-4700 BR-4600 BR-3500 BR-2400	OK	ST-4600 ST-4603 ST-3500 ST-3503 ST-2400 ST-2403	BL-4700 BL-4600 BL-3500 BL-2400 BL-R780 (*)
		Dual control lever for road bikes other than the above	Brake lever for road bikes other than the above

(\*) Brake lever for flat handle



: The "NO!" symbols indicate combinations that should not be used under any circumstances.

- Securely tighten the caliper brake mounting nuts to the specified tightening torque.
  - Use lock nuts with nylon inserts (self-locking nuts) for nut-type brakes.
  - For sunken nut type brakes, use sunken nuts of the appropriate length which can be turned six times or more; when re-installing, apply sealant (locking adhesive) to the nut threads.

If the nuts become loose and the brakes fall off, they may get caught up in the bicycle and the bicycle may fall over. Particularly if this happens with the front wheel, the bicycle may be thrown forward and serious injury could result.

- Brakes designed for use as rear brakes should not be used as front brakes.

## NOTE

### Be sure to also inform users of the following:

- When combined with a ceramic rim, Shimano standard brake shoes wear down more quickly.
- If the brake shoes have worn down until the grooves are no longer visible, consult a dealer or an agency.
- Different brake shoes have their own characteristics. Ask the dealer or the agency for details when purchasing the brake shoes.
- 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.

# INSTALLATION

## List of tools to be used

The following tools are required to assemble the product.

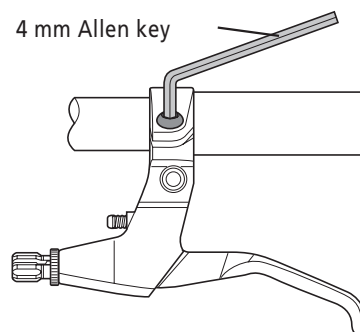
	Where to use	Tool
BR-4700	Pivot nut	5 mm Allen key
BR-4600	Shoe fixing bolt	4 mm Allen key
BR-3500	Cable fixing bolt	5 mm Allen key
BR-2400	Centering adjustment screw	3 mm Allen key
BL-4700	Clamp bolt	4 mm Allen key
BL-4600		
BL-3500	Reach adjustment bolt	2 mm Allen key
BL-2400		
BL-R780		

## 1. Installation of the brake lever

Use a 4 mm Allen key to install.

Even with the recommended tightening torque, there is a possibility that the carbon handlebars may become damaged and insufficiently tightened. Confirm the appropriate torque with the bicycle manufacturer or the handlebar manufacturer.

Use a handlebar grip with a maximum outer diameter of  $\Phi$  32 mm.

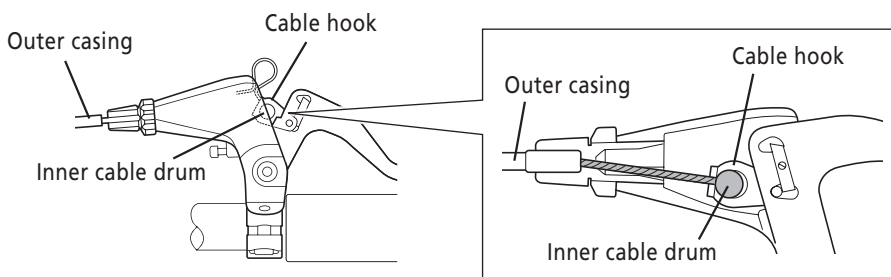
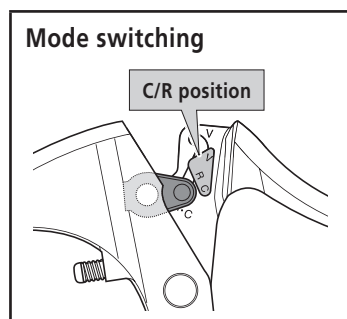


**Tightening torque:**  
6 - 8 N·m {53 - 69 in. lbs.}

## 2. Installation of the brake cable

### Note:

Cut the cable to a length at which it has some length to spare even when the handlebars are turned all the way to both sides.

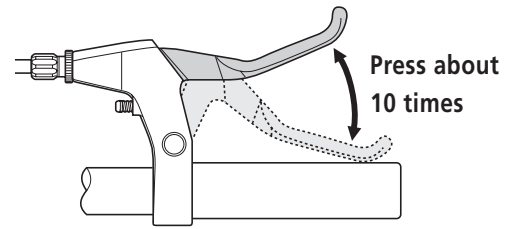


### 3. Installation of the caliper brake

Refer to the Caliper Brake section of General Operations for installation of the caliper brake.

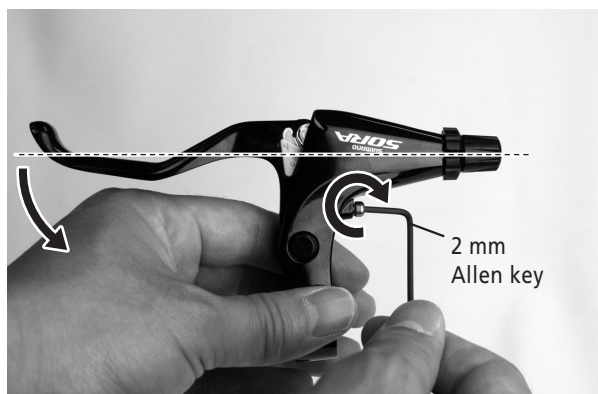
### 4. Check

After installing the brake cable on the side of the caliper brake, hold the brake lever until it touches the grip about ten times to check shoe clearance and each section for any abnormality before use.



# MAINTENANCE

## Reach adjustment



Turning clockwise causes the width to become more narrow.



Turning counterclockwise causes the width to become wider.

## Mode switching

\* The mode switching mechanism differs depending on the model.  
Refer to the mode switching table.



1. Use the screwdriver #1 to loosen the screw.



2. Align the mode switch with the position of the brake installed.




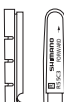

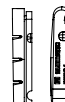



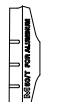
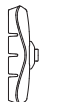



< V-BRAKE brakes >



< Caliper brakes >  
< Cantilever brakes >  
< Road mechanical disc brakes >



## Brake shoe characteristics

Model No.	R55C4	R55C2	R55C3	R55C for Carbon rim	R55C-1 for Carbon rim	R55C+1	R55CT4	M50T	R50T	R50T2	R50T4	R50T5
Brake shoe shape												
Cartridge type	x	x	x	x	x	x	x	-	-	-	-	-
Recommended rim	Aluminum	Aluminum	Aluminum	Carbon	Carbon	Aluminum	Aluminum	Aluminum	Aluminum	Aluminum	Aluminum	Aluminum
Characteristics	DRY Power	★★★★★	★★★★★	★★★★★	★★★★☆	★★★★☆	★★★★☆	★★★★☆	★★★★☆	★★★★☆	★★★★☆	★★★★★
	WET Power	★★★★☆	★★★★☆	★★★★☆	★★★★☆	★★★★☆	★★★★☆	★★★★☆	★★★★☆	★★★★☆	★★★★☆	★★★★☆
	Silence	★★★★☆	★★★★☆	★★★★☆	★★★★☆	★★★★☆	★★★★☆	★★★★★	★★★★☆	★★★★☆	★★★★☆	★★★★☆
	Anti-fading	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★	★★★★☆	★★★★☆	★★★★★	★★★★★	★★★★☆	★★★★★
	Durability (on road)	★★★★★	★★★★★	★★★★★	★★★★★	★★★★☆	★★★★☆	★★★★☆	★★★★☆	★★★★☆	★★★★☆	★★★★★
	Durability (muddy condition)	★★★★★	★★★★★	★★★★★	★★★★★	★★★★☆	★★★★☆	★★★★☆	★★★★☆	★★★★☆	★★★★☆	★★★★☆
	Anti rim-attack	★★★★☆	★★★★★	★★★★☆	★★★★☆	★★★★★	★★★★☆	★★★★☆	★★★★★	★★★★★	★★★★☆	★★★★☆

x: Yes

# SHIMANO

## **SHIMANO AMERICAN CORPORATION**

One Holland, Irvine, California 92618, U.S.A. Phone: +1-949-951-5003

## **SHIMANO EUROPE B.V.**

Industrieweg 24, 8071 CT Nunspeet, The Netherlands Phone: +31-341-272222

## **SHIMANO INC.**

3-77 Oimatsu-cho, Sakai-ku, Sakai-shi, Osaka 590-8577, Japan

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

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