(English) DM-BR0003-09

# **Dealer's Manual**

# Dual Pivot Caliper Brake/ DUAL CONTROL LEVER

BR-9000

BR-9010

BR-6800

BR-6810

BR-5800

BR-5810

**BR-RS500** 

BR-5710

BC-9000

BC-R680

SM-CB90

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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 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**

# **M** WARNING

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

It is recommended that you use only genuine Shimano parts. 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:

- It is important to completely understand the operation of your bicycle's brake system. Improper use of your bicycle's brake system may result in a loss of control or a fall, which could lead to severe injury.
  - Because each bicycle may handle differently, be sure to learn the proper braking technique (including brake lever pressure and bicycle control characteristics) and operation of your bicycle.
  - This can be done by consulting your professional bicycle dealer and the bicycle's owners manual, and by practicing your riding and braking technique.
- 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 you ride 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. If this is not done, the brakes may not work correctly.
- Because of the characteristics of the carbon fiber material, you must never modify the levers, otherwise the lever may break and the brakes may no longer work as a result.
- Check before riding that there is no damage such as carbon separation or cracking. If there is any damage, stop using the bicycle and contact the place of purchase or a bicycle dealer. Otherwise, the lever may break, and braking may become disabled.

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

• For brake 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.

Caliper brake	Combinations	Dual Control Lever	Brake lever
BR-9000 BR-9010 BR-7900 BR-6800 BR-6810 BR-5800 BR-5810 BR-RS500 BR-FS710 BR-5710	OK	ST-9070 ST-9071 ST-9001 ST-9000 ST-6870 ST-6871 ST-6800 ST-6770 ST-5800 ST-5700 ST-4600 ST-3500 ST-2400 ST-2400 ST-R353 ST-R350	BL-4600 BL-3500 BL-R780 BL-2400 BL-TT79
	(No!)	Dual control lever for road bikes other than the above	Brake lever for road bikes other than the above



 $\emph{g}$  : The "NO!" symbols indicate combinations that should not be used under any circumstances.

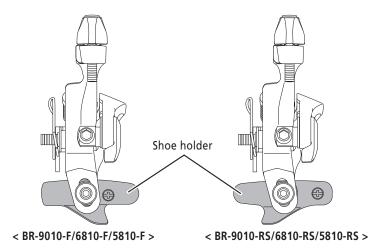
- The cable adjustment nut and the quick release lever are not equipped on the rear brake of BR-9010/6810/5810/5710; be sure to use SM-CB90. When the brake shoes are worn down, it becomes impossible to adjust the shoe clearance by hand.
- Securely tighten the caliper brake mounting nuts to the specified 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.
- For the shoe holder of BR-9010/6810/5810/5710, always use the dedicated brake shoe (R55C4, R55C4 (for carbon rim), or R55C4-1 (for carbon rim)). The conventional brake shoes (R55C3, R55C3 (for carbon rim), R55C2, R55C (for carbon rim), R55C (for ceramic rim), and R55C+1) have a different fixing position. This prevents the fixing bolt from being tightened, which will cause the brake shoe to come off and disable braking.

#### < BR-9010-RS/6810-RS/5810-RS >

BR-9010-RS/6810-RS/5810-RS is a rear brake. Cannot be used as a front brake.
 BR-9010-F/6810-F/5810-F (front brake) and BR-9010-RS/6810-RS/5810-RS use different shoe holders and internal parts.



#### < BC-9000/R680 >

BC-9000/R680 (polymer coating brake cable) is designed to have low frictional resistance. Be sure to observe the following instructions. If they are not observed, a sufficient holding force of the brake cable cannot be delivered. This may cause the brake cable to get loose and lose brake control, resulting in severe injury.

- Use in combination with a brake in the BR-9000/6800/5800/RS500 series.
- Use the designated cable grease (Y04180000) for BC-9000/BC-R680.
- When the inner cable is passed through an outer casing, grease may adhere on the inner cable fixing section. Be sure to wipe off the grease with a cloth before fixing the inner cable.

## **NOTICE**

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

- In the case of carbon levers, wash them by using a soft cloth. Be sure to use a neutral detergent. Otherwise, the material may get damaged, and the strength may be affected.
- Avoid leaving the carbon levers in places where high temperatures are present. Also keep them well away from fire.
- If using SHIMANO's road brake shoes in combination with ceramic rims, the brake shoes will wear more quickly than normal.
- If the brake shoes have worn down until the grooves are no longer visible, contact the place of purchase or a bicycle dealer.
- Different brake shoes have their own characteristics. Contact the place of purchase or a bicycle dealer 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 chiefly to explain the procedures for using the product.

# **INSTALLATION**

#### List of tools to be used

The following tools are needed to assemble this product.

#### Brake caliper

Usage location	Tool				
Drake fiving helt	5 mm hexagon wrench (BR-9000/6800/5800/RS500)				
Brake-fixing bolt	4 mm hexagon wrench (BR-9010/6810/5810/5710)				
Shoe fixing bolt	4 mm hexagon wrench				
Cable fixing bolt	5 mm hexagon wrench				
Contoning adjustment helt	3 mm hexagon wrench (BR-9000/6800/5800/RS500)				
Centering adjustment bolt	2 mm hexagon wrench (BR-9010/6810/5810/5710)				
Spring adjustment bolt	2 mm hexagon wrench (BR-9000/9010*/6800)				

<sup>\*</sup> BR-9010 consists of F and R models only.

(Spring adjustment cannot be carried out for BR-9010-RS.)

#### Brake cable

Usage location	Tool				
Cable cutter	TL-CT12				

#### **Dual control lever**

Usage location	Tool			
Clamp bolt	5 mm hexagon wrench			

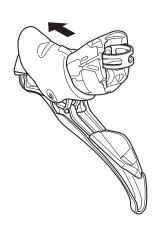
When installing the components to carbon frame/handle bar surfaces, verify with the manufacturer of the carbon frame/parts for their recommendation on tightening torque in order to prevent over tightening that can cause damage to the carbon material and/ or under tightening that can cause lack of fixing strength for the components.

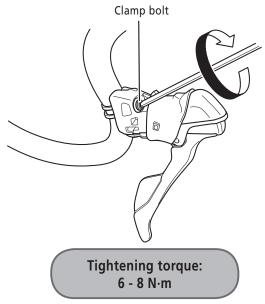
## ST-9000/6800/5800/5700

## **■** Installation to the handlebar

#### < ST-9000/6800/5800 >

• Secure the assembly with the clamp bolt at the upper section of the bracket. Pull the bracket cover back side and use a 5 mm hexagon wrench to tighten the clamp bolt.



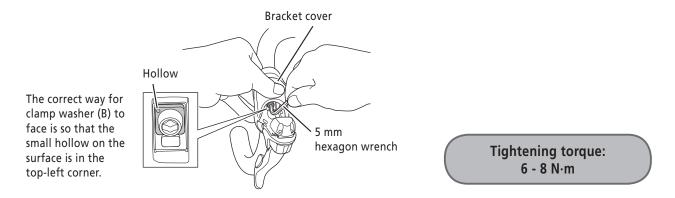


## Notice:

The clamp band, clamp bolt, and clamp nut of ST-9000/6800/5800 have no compatibility with other products. Do not use components that are used in other products together.

#### < ST-5700 >

Move the bracket cover forward, and then securely tightening the mounting nut with a 5 mm hexagon wrench.



## ■ Installation of the brake cable

A lubricant appropriate for this product is used for the brake cable and it is shipped in a properly lubricated state.



When passing the inner cable through an outer casing, if grease adheres on the inner cable fixing section, wipe it off with a cloth before fixing the inner cable. If grease adheres on the fixing section, a sufficient holding force of the brake cable cannot be delivered. This may cause the brake cable to get loose and lose brake control, resulting in severe injury.

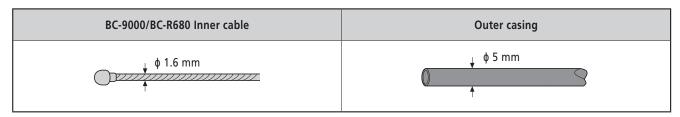
#### Notice:

Be careful not let the BC-9000/R680 inner cable come into contact with the shifting lever or the metal section (adjustment section) of the caliper brake. When the inner cable is installed, coating may be damaged and become fluffy; however, it will not affect the function.

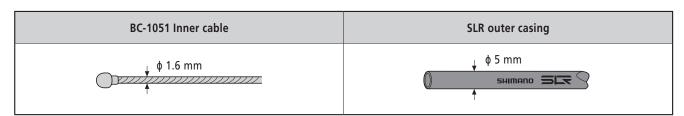
Use a cable which still has some length to spare even when the handlebars are turned all the way to both sides.

## Cable used

## < ST-9000/6800/5800 >



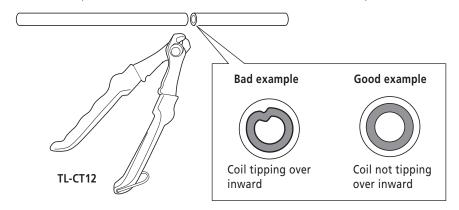
#### < ST-5700 >



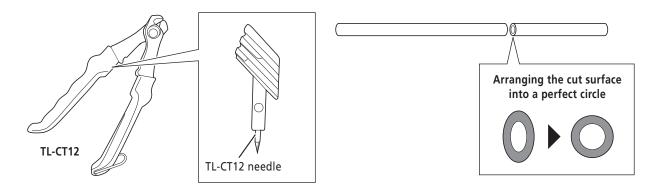
## Cutting the outer casing

## Notice:

- Use a cable which still has some length to spare even when the handlebars are turned all the way to both sides.
- Be careful not to get your hand injured by the TL-CT12 needle section.
- 1. Use the cable cutter (TL-CT12) or an equivalent tool to cut the cable so that the coil does not tip over inward.

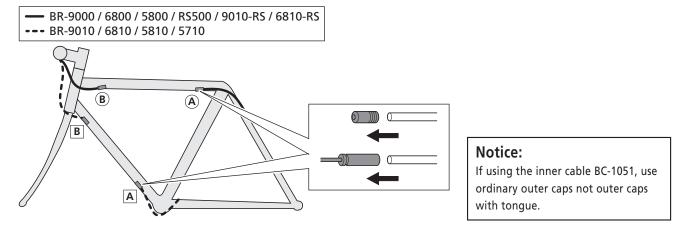


**2.** After cutting, expand the tip of the liner (\$\phi\$ 2.2 or more) with TL-CT12 or other narrow tool.



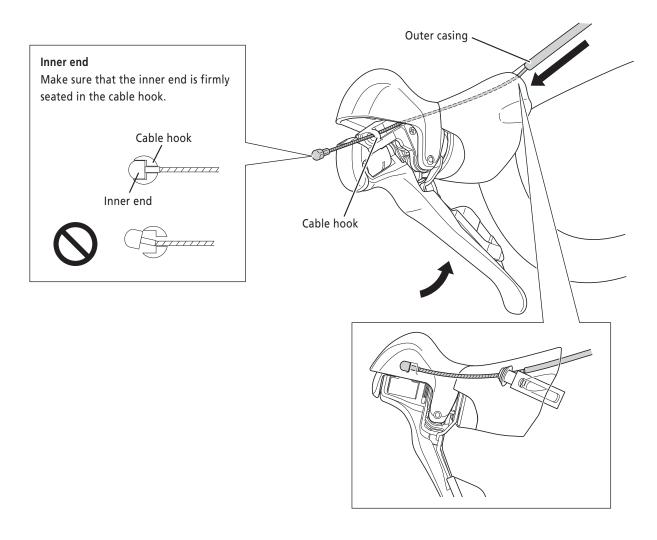
## Rear brake cable/Outer cap with tongue installation position

• Install the outer cap with tongue at the position (A, B)/A, B) specified in the illustration.



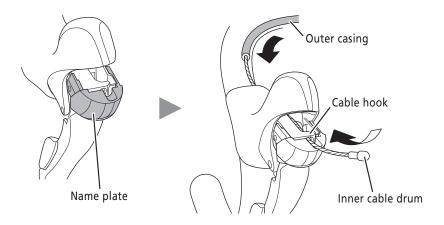
## < ST-9000/6800/5800 >

Move the lever in the direction of brake operation and put the brake cable through.

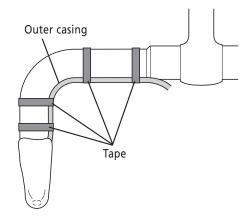


## < ST-5700 >

Pass the inner cable through as shown in the illustration, and then set the inner cable drum into the cable hook.



Temporarily secure the outer casing to the handlebar (by using tape or similar material).



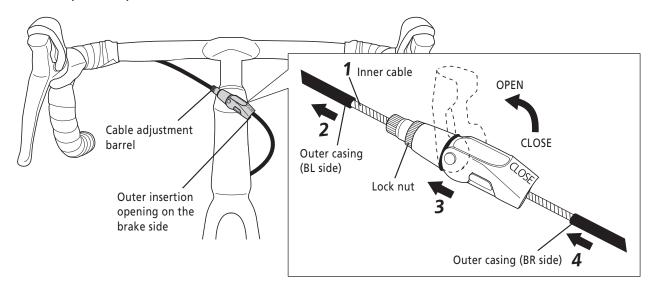
## Λ

## WARNING

The cable adjustment nut and the quick release lever are not equipped on the rear brake of BR-9010/6810/5810/5710; be sure to use SM-CB90 (Cable adjuster). When the brake shoes are worn down, it becomes impossible to adjust the shoe clearance by hand.

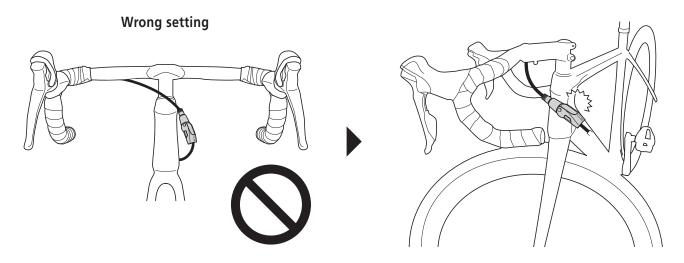
## **■** Installing SM-CB90

Install at the position specified in the illustration.



## Notice:

Do not install where it is entangled with the top tube when the handle is turned.



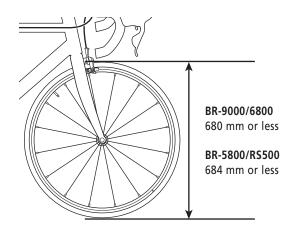
# BR-9000/6800/5800/RS500/9010/6810/5810/5710

# ■ Installation of the brake caliper

## < BR-9000/6800/5800/RS500 >

## Recommended tire size/rim width

		Thickness	Outside tire diameter	
Available tire size	BR-9000/6800	φ 25 mm or less	φ 680 mm or less	
	BR-5800/RS500	φ 28 mm or less	φ 684 mm or less	

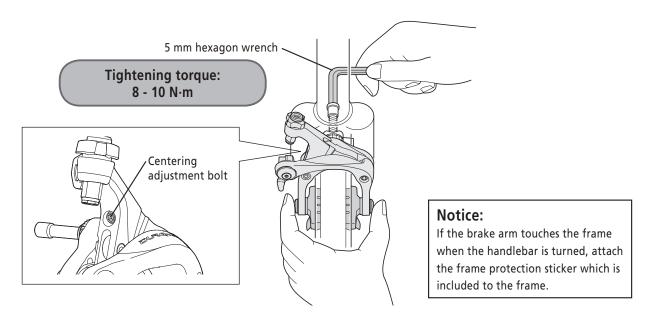


Available rim width	Caliper brake	Rim	Rim width	Remarks
	BR-9000/6800/5800/RS500	Aluminum rim	19.6 - 24 mm	
		Carban rim	19.6 - 24 mm	
		Carbon rim		24 - 28 mm

## Notice:

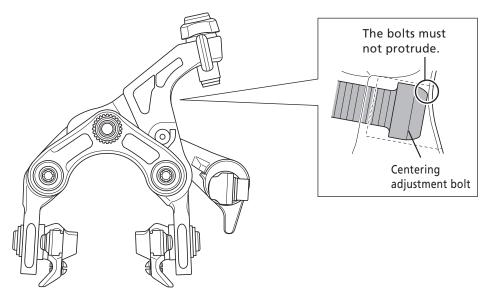
When using a carbon rim with a width of 24 to 28 mm use the R55C4-1 (for carbon rims). The front brake cannot be installed as the rear brake and vice versa.

Compress the arch, and set while the shoe is in firm contact with the rim.

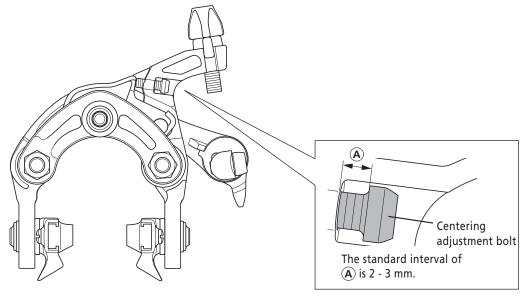


The adjustment position serving as a reference for the centering adjustment bolt is shown in the drawing below.

## < For BR-9000/6800 >



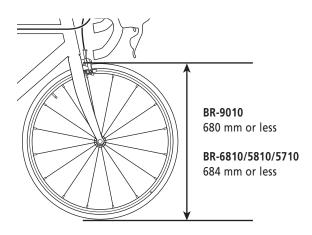
## <For BR-5800/RS500>



## < BR-9010/6810/5810/5710 >

## Recommended tire size/rim width

		Thickness	Outside tire diameter
Available tire size	BR-9010	φ 25 mm or less	φ 680 mm or less
	BR-6810/5810/5710	φ 28 mm or less	φ 684 mm or less

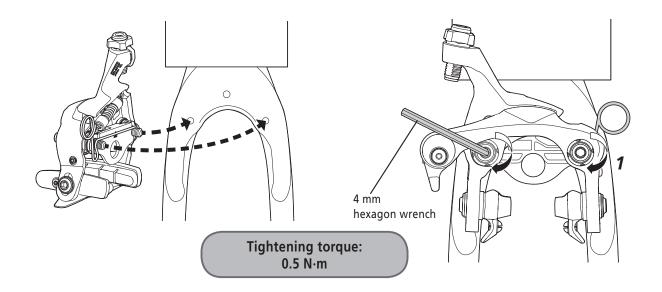


Available rim width	Caliper brake	Rim	Rim width	Remarks
	BR-9010/6810/ 5810/5710	Aluminum rim	21 - 24 mm	
			21 - 24 mm	
			24 - 28 mm	Please use R55C4-1 (for carbon rims)

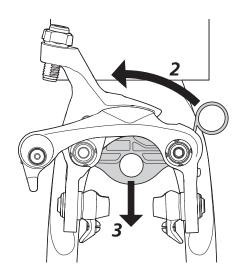
## Notice:

Do not remove the assembly tool until installation is finished. The brake caliper may be scratched.

**1.** Temporarily fix the assembly tool together on the frame base.



**2, 3.** Pull out the assembly tool in the direction of the arrow.



4. Fully tighten the brake fixing bolt.

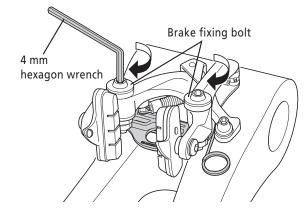
Tightening torque: 5 - 7 N⋅m

**5.** Finally, remove the protection sheet.

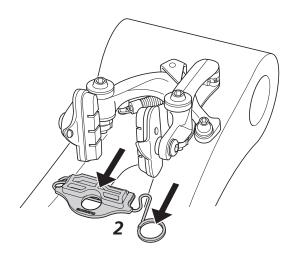
## < BR-9000/6800/5800/RS500/9010/6810 >

**1.** Temporarily fix the assembly tool together on the frame base.

Tightening torque: 0.5 N⋅m



**2.** Pull out the assembly tool in the direction of the arrow.



**3.** Fully tighten the brake fixing bolt.

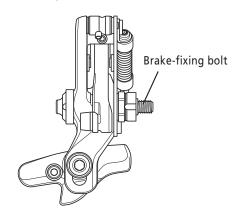
Tightening torque: 5 -7 N·m

**4.** Finally, remove the protection sheet.

## Caution when attaching the caliper brake to the frame:

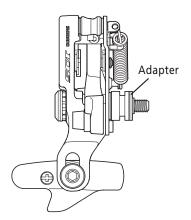
## < BR-9010/6810 >

• There are 2 types of brake-fixing bolt with lengths of 9.2 mm and 7.5 mm. When attaching the caliper brake to the frame, select a bolt with a length that matches the depth of the screw hole in the frame.

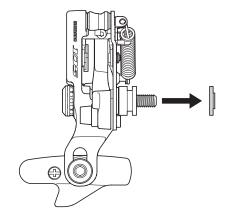


## < BR-5810/5710 >

- When mounting the caliper brake on a frame with a screw hole 9.2 mm deep or deeper, remove the adapter.
- When mounting the caliper brake on a frame with a screw hole less than 9.2 mm deep, the adapter is required.

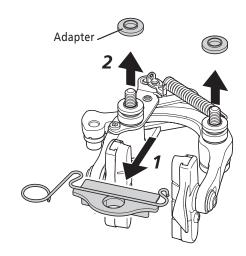


For frames with a screw hole less than 9.2 mm deep (Frames such as frames with stainless steel screws)

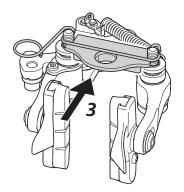


For frames with a screw hole 9.2 mm deep or deeper (Frames such as frames with aluminum screws)

- **1.** Remove the assembly tool.
- **2.** Remove the adapter.



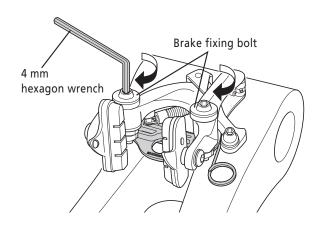
**3.** Mount the assembly tool in the original condition.

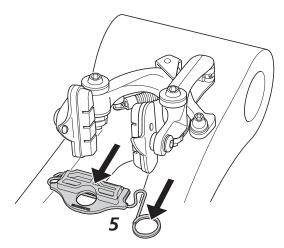


**4.** Temporarily fix the assembly tool together on the frame base.

Tightening torque: 0.5 N⋅m

**5.** Pull out the assembly tool in the direction of the arrow.





**6.** Fully tighten the brake fixing bolt.

Tightening torque: 5 - 7 N·m

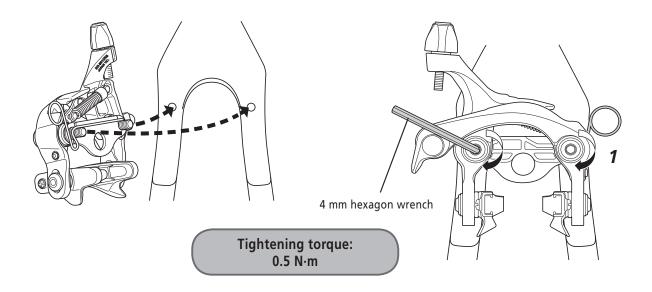
 ${m 7.}$  Finally, remove the protection sheet.

## < BR-9010-RS/6810-RS/5810-RS >

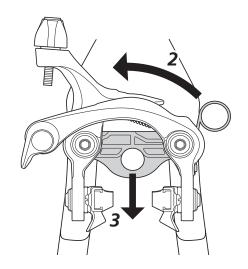
## Notice:

BR-9010-RS/6810-RS/5810-RS is a rear brake. Cannot be used as a front brake.

**1.** Temporarily fix the assembly tool together on the frame base.



 $\boldsymbol{2}$ ,  $\boldsymbol{3}$ . Pull out the assembly tool in the direction of the arrow.



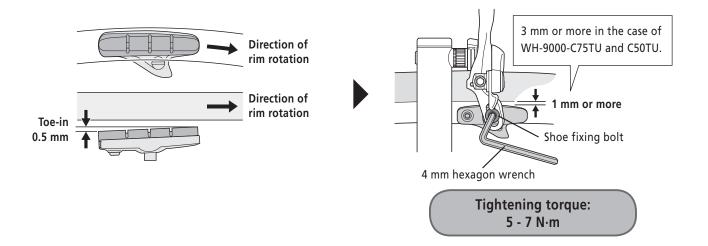
**4.** Fully tighten the brake fixing bolt.

Tightening torque: 5 - 7 N⋅m

**5.** Finally, remove the protection sheet.

## **■** Brake shoe setting position

- The contact angle (toe-in) of the shoe against the rim can be adjusted. Allowing toe-in enables smooth brake operation.
- After adjusting the brake shoe position so that the shoe surface and the rim surface are as shown in the illustration, tighten the shoe fixing bolt.



## **■** Fixing the BC-9000/R680 cable



## WARNING

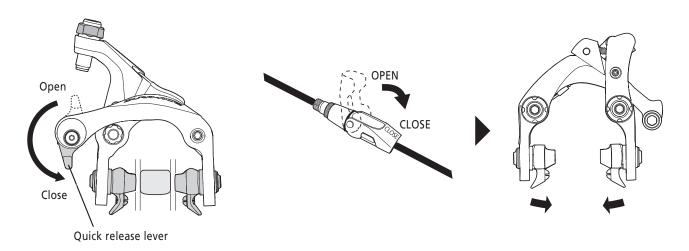
When passing the inner cable through an outer casing, if grease adheres on the inner cable fixing section, wipe it off with a cloth before fixing the inner cable. If grease adheres on the fixing section, a sufficient holding force of the brake cable cannot be delivered. This may cause the brake cable to get loose and lose brake control, resulting in severe injury.

#### Notice:

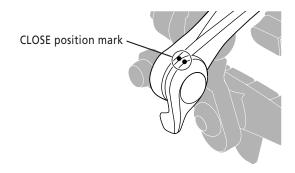
Be careful not let the BC-9000/R680 cable come into contact with the shifting lever or the metal section (adjustment section) of the caliper brake. When the inner cable is installed, coating may be damaged and become fluffy; however, it will not affect the function

**1.** Move the quick release lever to the "CLOSE" position.





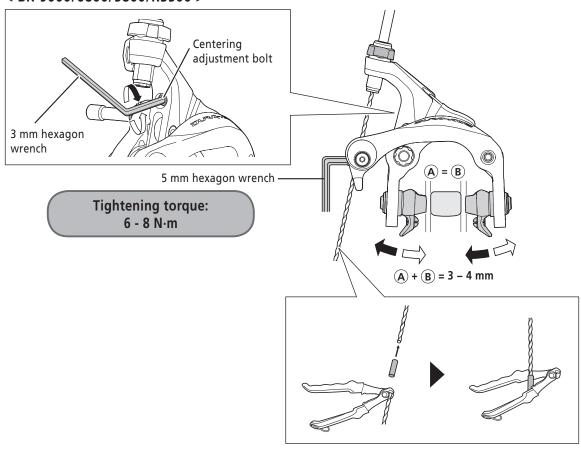
For models with a CLOSE position mark on the quick release lever and brake caliper side, adjust the position of each mark so that they are aligned. At this time, check that you can feel a click.



**2.** Wipe off grease or other lubricants adhering on the inner cable fixing section.

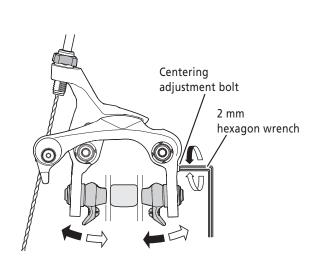
After that, fix the inner cable while adjusting the shoe clearance, and cut off an excess portion of the inner cable. Finally, install the inner end cap.

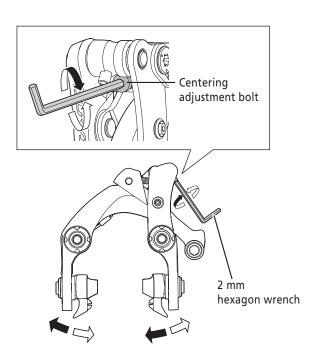
## < BR-9000/6800/5800/RS500 >



# < BR-9010-F/6810-F/5810-F/5710-F and BR-9010-RS/6810-RS/5810-RS >

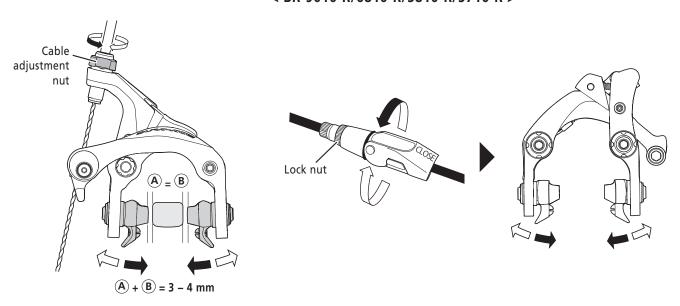
## < BR-9010-R/6810-R/5810-R/5710-R >



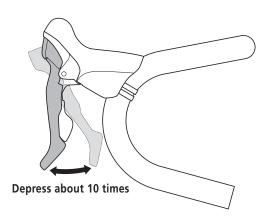


**3.** Turn the cable adjustment nut to readjust the shoe clearance.

## < BR-9010-R/6810-R/5810-R/5710-R >

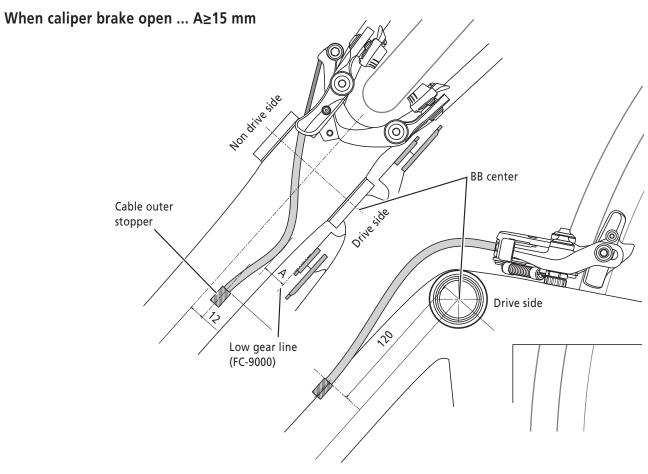


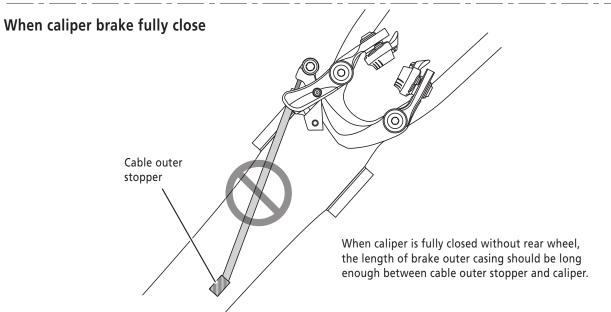
**4.** Depress the brake lever about 10 times as far as the grip and check that everything is operating correctly and that the shoe clearance is correct before using the brakes.



Notice:

Cable outer stopper positions for BR-9010-R/6810-R/5810-R/5710-R & Proper outer casing length



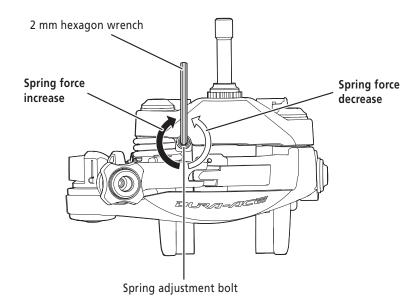


# **ADJUSTMENT**

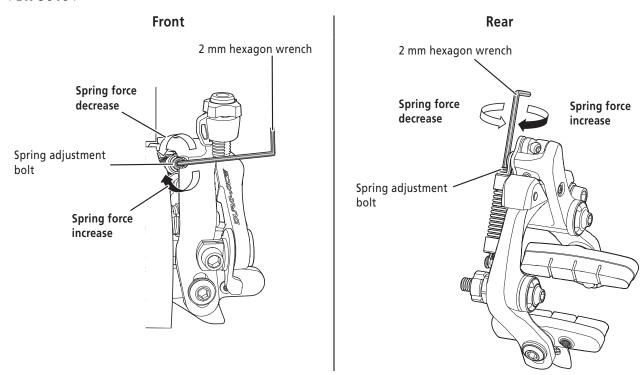
# ■ Arch spring tension adjustment

You can use the spring adjustment bolt to adjust the spring tension of the arch.

## < BR-9000/6800 >



## < BR-9010 >



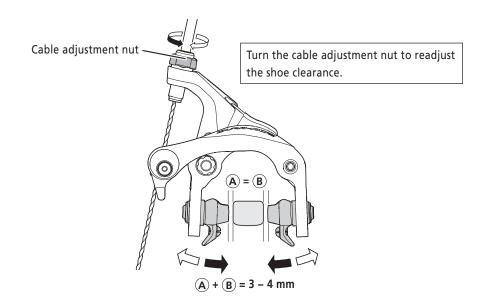
## Notice:

For BR-9010-RS the arch spring tension can not be adjusted.

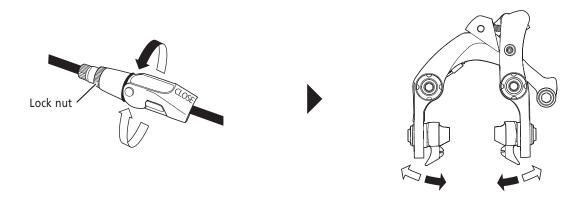
## ■ Readjustment of the shoe clearance (In the case the brake shoes are worn)

Wear in brake shoes widens the clearance with the rim.

- Adjust cable tension with the cable adjustment nut.
- When the grooves of a brake shoe are worn down, replace the brake shoe.

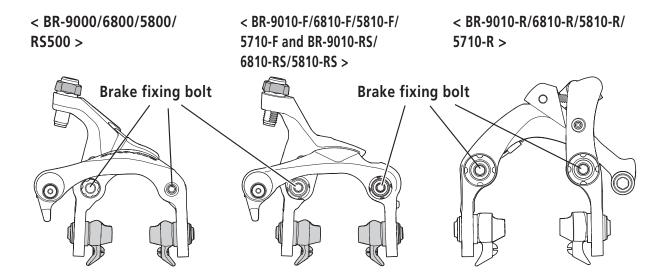


#### < BR-9010-R/6810-R/5810-R/5710-R >



## Notice:

The adjustment of the brake fixing bolt does not adjust the looseness of the brake arm itself.



#### < BR-6810-R/5810-R/5710-R >

When the brake lever does not return smoothly, adjust the fixing position of the spring. Perform this work by removing the brake caliper from the frame.

## When using the assembly tool

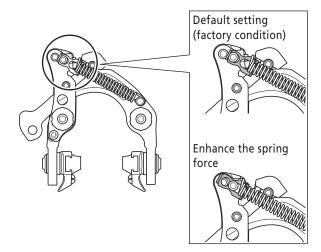
The use of the assembly tool (Y8L398040) facilitates the repositioning of the spring.

**1.** Remove the brake caliper from the frame.

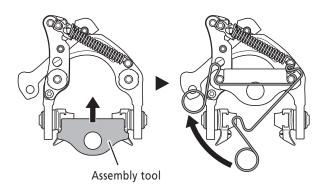
#### Notice:

When removing the brake caliper from the frame, be careful of the springing back of the spring as it has tension.

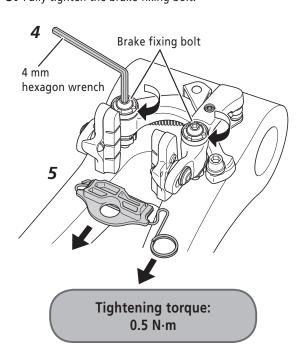
**2.** Reposition the spring.

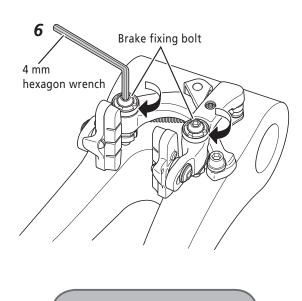


**3.** Install the assembly tool to the brake caliper.



- **4.** Temporarily fix the assembly tool together on the frame base.
- **5.** Pull out the assembly tool in the direction of the arrow.
- **6.** Fully tighten the brake fixing bolt.





Tightening torque: 5 - 7 N⋅m

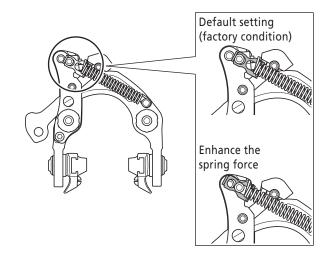
## When not using the assembly tool

**1.** Remove the brake caliper from the frame.

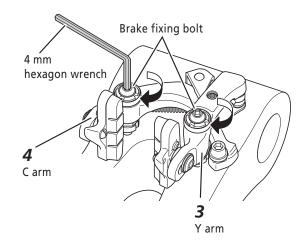
## **Notice:**

When removing the brake caliper from the frame, be careful of the springing back of the spring as it has tension.

**2.** Reposition the spring.

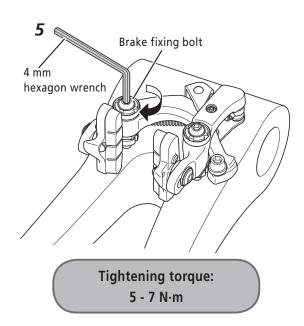


**3.** Half-tighten the Y arm onto the frame.



4. Tighten the C arm onto the frame.

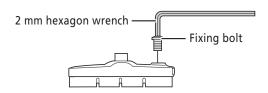
**5.** Fully tighten the brake fixing bolt.



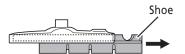
# **MAINTENANCE**

## ■ Replacement of the cartridge shoe

**1.** Remove the fixing bolt.

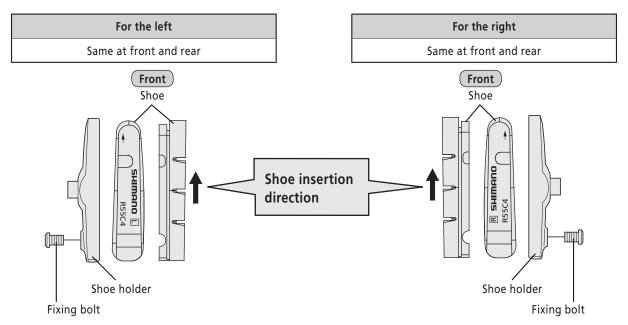


**2.** Remove the shoe by sliding it along the groove of the shoe holder.



**3.** There are two different types of shoe and shoe holder to be used in the left and right positions respectively. Slide the new shoes into the grooves on the shoe holders while taking note of the correct directions and bolt hole positions.

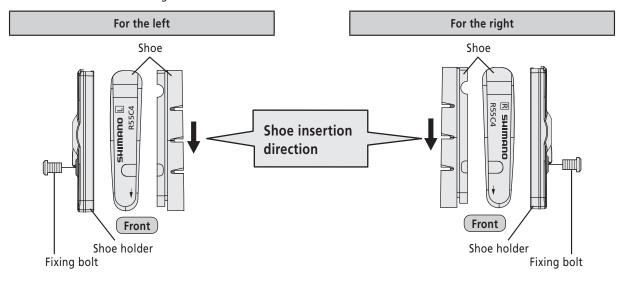
## < BR-9000/6800/5800/RS500/9010-RS/6810-RS/5810-RS >



## < BR-9010/6810/5810/5710 >



For the shoe holder of BR-9010/6810/5810/5710, always use the dedicated brake shoe (R55C4, R55C4 (for carbon rim), or R55C4-1 (for carbon rim)). The conventional brake shoes (R55C3, R55C3 (for carbon rim), R55C2, R55C (for carbon rim), R55C (for ceramic rim), and R55C+1) have a different fixing position. This prevents the fixing screw from being tightened, which will cause the brake shoe to come off and disable braking.



## 4. Tighten the fixing bolt.

Tightening torque: 1 - 1.5 N·m

# **■** Brake shoe characteristics

	Model No.	R55C4	R55C2	R55C3	R55C for	R55C-1 for	R55C+1	R55CT4	M50T	R50T	R50T2	R50T4
Brake shoe shape			onomate Disa	one of the control of	Carbon rim	Carbon rim	operator to the constant of th			Differ on Azenne		
Ca	artridge type	×	×	×	×	×	×	×	-	-	-	-
Reco	ommended rim	Aluminum	Aluminum	Aluminum	Carbon	Carbon	Aluminum	Aluminum	Aluminum	Aluminum	Aluminum	Aluminum
	DRY Power	****	****	****	****	****	****	****	****	****	****	****
	WET Power	*****	****	****	****	****	****	****	****	****	****	****
	Silence	****	****	****	****	****	****	****	****	****	****	****
	Anti-fading	****	****	****	****	****	****	****	***	****	****	****
	Durability (on road)	****	****	****	****	****	****	****	****	****	****	****
	Durability (muddy condition)	****	****	****	****	****	****	****	***	****	****	****
유	Anti rim-attack	****	****	****	****	****	****	****	****	****	****	****
Characteristics	BR-9000	Standard	-	-	Option	Option	-	Option	-	-	-	-
ics	BR-9010	Standard	-	-	Option	Option	-	Option	-	-	-	-
	BR-6800	Standard	-	-	Option	Option	-	Option	-	-	-	-
	BR-6810	Standard	-	-	Option	Option	-	Option	-	-	-	-
	BR-5800	Standard	-	-	Option	-	-	Option	-	-	-	-
	BR-5810	Standard	-	-	Option	Option	-	Option	-	-	-	-
	BR-RS500	Standard	-	-	Option	-	-	Option	-	-	-	-
	BR-5710	Standard	-	-	Option	Option	-	Option	-	-	-	-

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