

## Disc brake installation and operation manual

### ES-1 mechanical disc brake (compatible for the bicycles)

TWINS ES Series

Lanxi Jieke Sports Apparatus Manufacturing Corporation Ltd.

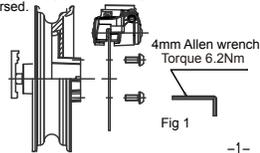
[Http://www.discbrake.cn](http://www.discbrake.cn)

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#### Installation Instruction

##### Rotor installation (See Fig. 1)

- (1) Mount the caliper slot to the rotor after the alignment. Then using M5 bolts to fully attach the rotor to the hub by aligning the 6 holes of the rotor with the 6 bolt holes of the hub, torque 6.2 Nm.
- (2) When assembling, the specification marks on the rotor must face outwards. And the rotor must be installed with the rotation arrow label pointing in the same direction as the forward rotation of the wheel.
- (3) When replacing the caliper or the brake pads, the 110 rotor can be directly taken out of the caliper along the gap between the hub and the rotor, the 120 rotor can be directly disassembled. Warning: Safety problems may occur if the disc is reversed.



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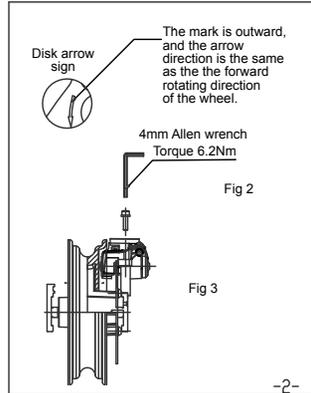


Fig 2

Fig 3

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#### Caliper installation (See Fig. 3)

1. Use two M5X16 to fix the caliper to the caliper adapter (lightly tightened)
2. Complete the following steps:  
After the brake cable is installed, pull the brake lever to its tightest position, and then alternatively tighten the hex socket head cap screws on the caliper (torque 6-6.5 Nm). Then release the brake lever to make sure the disc is between 2 brake pads. Then spin the wheel to make sure the disc is clear to brake pads.
3. Brake inner cable installation  
(1). Thread the brake inner cable through the adjusting screw on the caliper force arm.  
(2). Continue to thread the brake inner cable through the small holes of the cable pressing plate of the pull rod on the caliper. The pull rod is pulled forward for 3-7 degrees for pre-tightening, and then tighten the cable pressing screw (torque 6-8 Nm).  
(3). The tension of the brake cable can be adjusted by the adjusting screw on the force arm or the adjusting screw on the brake lever.

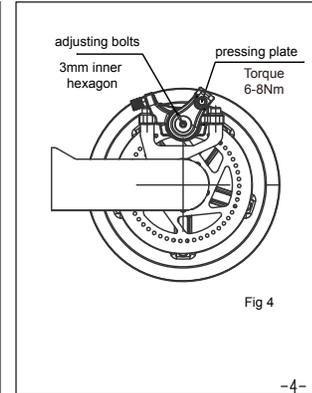


Fig 4

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Warning: The length of the tail end of the brake inner cable must be no more than 20 mm, in case of danger caused by the brake inner cable accidentally caught into the disc.

3. Brake pads adjustment and replacement  
The clearance between rotor and brake pads is 0.2-0.4 mm for each side. When the brake pads are worn, both clearances have to be adjusted to be equal in case of losing the safety braking force.

##### 1. Brake pad adjustment

- A gap: When A gap is too large, insert a 3 mm Allen key into the hex socket of adjusting bolt in the caliper. Then turn the adjusting bolt slowly in a clockwise direction to adjust the clearance between the brakepads to 0.2-0.4 mm.  
⚠ Please do not try adjusting the inner bolt cap on the other side, because it has no adjustment function.
- B gap: When B gap is too large, the connection screws have to be loosened (see Fig. 4). A 3 mm Allenkey is used to slowly turn the adjustment bolt in a clockwise direction (Fig. 3), until the clearance between rotor and brake pad is 0.2-0.4 mm for each side. Then repeat the caliper installation steps mentioned in Step 2.

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#### 2. Brake pads replacement

The brake pads need to be replaced immediately if the brake pads are worn to a total thickness of less than 2.7 mm or any other necessary reasons.

When replacing brake pads:

a) When replacing brake pads, the caliper needs to be removed first, then remove the pad pin, then adjust the pull rod to an appropriate angle and pull out the brake pads from the side of the pull rod. Reinsert new brake pads and fix it with the pad pins.

b) After the brake pads are replaced, the clearance between the brake pads needs to be adjusted to 2.7-3.0 mm. Adjust the adjusting screw on the force arm or the adjusting screw on the brake lever to the bottom (leave out the maximum adjustment).

c) Repeat the caliper installation mentioned in Step 2.

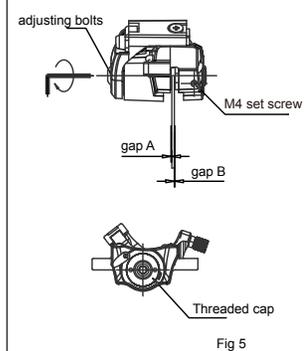


Fig 5

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#### Warning:

- ☆ a. The M4 hex socket head cap screw is not allowed to be loosened to adjust the brake pad clearance by adjusting the thin-headed screw (Fig. 5).
- ☆ b. When the brake pads are worn too thin, the manner to compensate the wear by tightening the inner cable is not allowed in case of affecting the normal brake operation.
- ☆ c. Before riding the bicycle, please check the thickness of the brake pads. When the wear of the brake pads exceeds 0.8 mm, the replacement of the pad is recommended. When the total thickness of the worn brake pad is less than 2.7 mm, the pads must be replaced to ensure the safety riding.
- ☆ d. Do not use the manner of tightening the brake inner cable only or replacing the brake pads of different specifications to solve the wear issue in case of interference between disc and pads.

(☆ suggests the important notification)

When pulling the brake lever tightly, the gap between the pull rod and the force arm is at least 9mm under the normal state.

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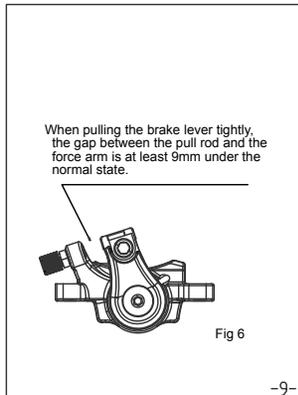


Fig 6

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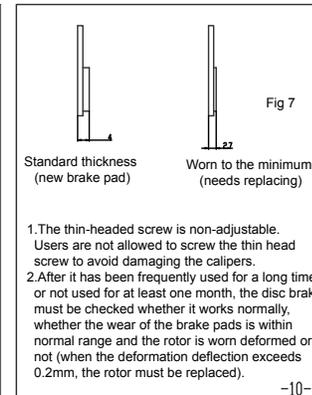


Fig 7

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3. Be careful not to allow any oil or grease to get onto the brake pads. If the pads become contaminated, they should be replaced to make sure the safety riding.

4. When users use the brake during riding, there may be slight noise caused by the friction of the brake pads and the disc. It is normal and no need to worry about.

5. It is critical to completely understand the operation of bicycle braking system. Any improper use of brakes may lead to a loss of control or even an accident and possible severe injury. Make sure to learn the proper braking technique and operation of bicycles because each bicycle may handle differently. Please consult professional bicycle dealer or the manual for assistance and improve the riding and braking technique.

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6. Before each ride, please check whether the disc brakes can work normally. If abnormal occurrence, such as poor braking feeling, insufficient braking force, or brake failure happens, please consult professional technician in bicycle dealers for inspection and tune-up.

7. When replacing the incoming film, please make sure that the replaced one is the same as the original one. Unanimous. If the inconsistent incoming film is replaced, it may cause safety problems.

8. In order to avoid the hidden danger of loosening of the screws due to damage to the anti-loosening glue, all the loose screws that have been disassembled during the maintenance and repair process must be replaced with new anti-loosening screws.

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LANXI JIEKE SPORTS APPARATUS  
MANUFACTURING CO.,LTD.  
Address:NO.123,Kaixuan Road,Lanxi,  
Zhejiang,China  
Tel:+86 579 88948936 88988019  
Fax:+86 579 88988075  
Zip:321100  
[Http://www.discbrake.cn](http://www.discbrake.cn)  
E-MAIL:nx@discbrake.cn