

Caution:

1. Bengal hydraulic disc brakes are specially designed for bicycle using only. To assemble on other kinds of vehicle may be caused injury. Bengal will not guarantee its safety and void the product warranty. Improper installation of Bengal Disc Brakes may cause accident.
2. Before riding, please make sure if hydraulic disc brake is working properly and the brake pads need to be adjusted or replaced. * Always wear helmet when riding.
3. Understanding how to operate a hydraulic disc brake system is very important. Improper operation will result in lost braking power, cause an accident, and may result in even physical injury or death. Therefore, learn the proper operation of your brakes thoroughly before taking your first ride.
4. Do not touch the caliper and rotor after riding that might be heated to cause injury. Please cool them first before repair and adjust.
5. Consult a qualified technician/mechanic and use the correct tools for any installation or adjustment.

Tool for disc brake mounts Rear end and frame:

Torx T25 wrench, 2mm/2.5mm/5mm Allen key, 6mm/8mm Open-end wrench, Torque wrench, Knife, M4*P0.7 Connecting bolt, 3*1.2 O-ring, M6*P1 Connecting bolt, 3.5*1.5 O-ring, Syringe*2pcs, Clean towel, DOT4 Brake oil, Rubber hammer, Rubber Pad, Vise

1. installation of Rotor

- 1-1. Wipe the rotor and hub surface with alcohol.
- 1-2. Using Torx T25 wrench to screw the rotor with M5*P0.8*10 rotor screw onto the hub in order and make sure the rotation direction (laser narrow) of the rotor is as same as wheel's. Tightening torque: 6-8Nm (53.11~70.81 in. lbs)



2. installation of Master cylinder

- 2-1. Mounting master cylinder/brake lever onto handlebar using a Torx T25 wrench. Before tightening adjust its angle and position. Tightening torque: 4-6Nm (35.4~53.11 in. lbs) (turn master cylinder right side up, as attached figure 2)

3. Installation of Adaptor

- 3-1. In installing Bengal Hydraulic Disk Brake, tighten the qualified adaptor on the front fork or frame by M6XP1X18 adaptor fixing bolt and washer with locking torque at 8~10 Nm (70.81~88.51 in.lbs). (As shown in FIG.2).

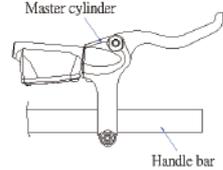


FIG.1

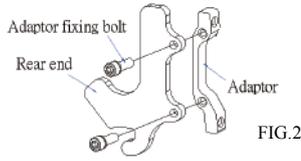


FIG.2

4. installation of Caliper:

- 4-1. Install the calipers on the adaptor by M6 calipers fixing bolt (2pcs) loosely and let calipers be able to swivel left and right for adjusting its position. (As shown in Fig. 3).

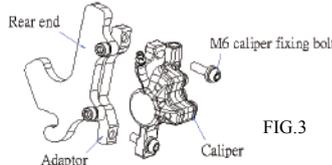


FIG.3

5. Hose installation and its length modification

- 5-1. Fix the hose on the frame and setup its length according to the frame size. Turn the lever left and right to make sure the hose is in appropriate length. If yes, go to step 6-7 directly for caliper adjustment.
- 5-2. If hose is found too long, dismount the hose from the dispatch by an 8mm wrench, measure and cut it to appropriate length (cutting edge to level). Then, fit the connecting bolt and connecting insert in their orders on the hose; wrap the hose with rubber pad and clip with pincer pliers lightly, knock the tube connecting insert into the hose with rubber hammer and positioned correctly. (As shown in Fig. 4); or by using a special purpose fixture to position. (As shown in Fig. 4-1)

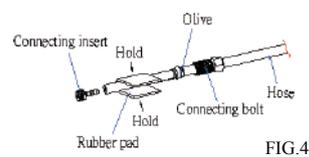
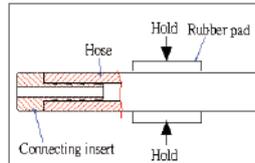


FIG.4



- 5-3. Then, tighten the hose on to the dispatch with an 8mm wrench at a torque of 6-8Nm (53.11~70.8 in.lbs). Finally, put on cover to complete. (As shown in Fig. 5)

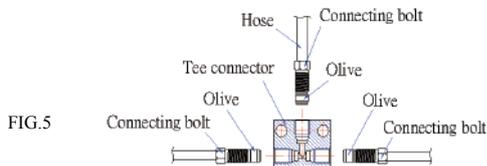


FIG.5

6. Filling up DOT4 Braking oil

- 6-1. Untighten the M5 fixing nut by a 2.5mm hex wrench, tighten the syringe(a) (syringe + M5 connector + O-ring) with 90% filled (abt. 25cc) braking oil onto the oil bleeder hole at a torque of 2~3Nm (17.7~26.55 in.lbs) (as shown in Fig. 6-1)

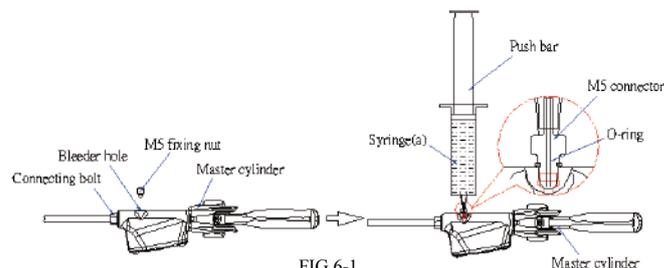


FIG.6-1

- 6-2. Dismount the bleeder nut and bleeder cap at the both side of the dispatch. Screw the unfilled syringe (b) [syringe+m5/m6connector+O-ring] into the bleeder screw hole with tightening torque 1~2Nm (8.85~17.7in. lbs) as FIG.6-2 show.

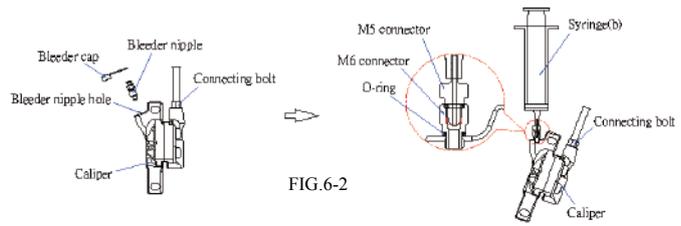


FIG.6-2

- 6-3. Pump the braking oil in syringe (a) of master cylinder into oil reservoir with less oil left. At this time, braking oil will flow to caliper through hose and then through caliper into syringe (b). Afterwards, Pumping the brake oil to the syringe (b) which located at the Caliper's both side back to the syringe (a) of the Master Cylinder. (as shown in Fig. 6-3) and press handle several times. Repeat the above procedure of braking oil injection 3-4 times. Finally pump the braking oil back to syringe (a) of master cylinder. Repeat the steps to expel the entrapped air. Caution: make sure not to pump the air in any syringe into the disc braking system.

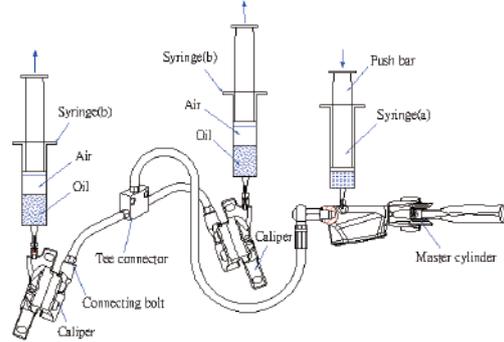


FIG.6-3

- 6-4. Wrap around the M6 connector of syringe (b) for calipers by clothes to prevent braking oil from overflowing, then take off the syringes and tighten the bleeder nipples. Wipe off the residual braking oil and clean. (High pressure air is applicable to clean up the residual braking oil).
- 6-5. Stroke back and forth the handle several times to make sure it feels solid before going into next step. If not, repeat 6-2, 6-3 and 6-4 steps.
- 6-6. After the disc braking system is for sure to be available, wrap the M5 connector of the syringe (a) of master cylinder up and take off the syringes. Tighten the bleeder nipples and wipe the residual braking oil off and clean.
- 6-7. Hold the piston after Stroking the handle back and forth several times, so that the caliper can tightly clip the disk. Adjust the caliper in the middle of disk (as shown in Fig. 6-4), tighten M6 calipers fixing bolt (2 pcs) at a torque of 8~10 Nm (70.81~88.51 in. lbs).
- 6-8. Turn the wheel to see if there exists strange noise or abnormal abrasion. If yes, untighten M6 calipers fixing bolt and repeat 6-7 steps and readjust the position of caliper until the wheel can turn freely without trouble to complete.
- 6-9. Adjust the holding space between handle and lever to fit personal requirement by a 2mm hex wrench. (As shown in Fig. 6-5).
- 6-10. Confirm again if all bolts are tightened at each required torque.

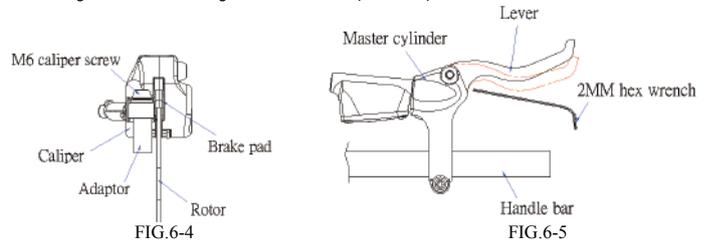


FIG.6-4

FIG.6-5

Notes:

- a. In changing the braking oil, it is necessary to apply the pressure on the syringe on one end and exhaust the old oil by vacuum sucking. The exhausted waste oil should be disposed by recycling agencies.
- b. It is strongly recommended to use DOT4 braking oil (never use DOT5 above or mix with unspecified oil) to prevent product lifespan from being shortened drastically.
- c. In filling up braking oil, please keep the braking oil away from physical body, brake pad or other parts & components. In case spills on body, wash and clean with tap water immediately; for other parts, wipe them up clean.
- d. It is recommended to test the braking system in low speed previously before going wild.

7. Steps of changing brake pad:

- 7-1. Untighten the calipers fixing bolt and take off calipers.
- 7-2. Press the piston back.
- 7-3. Rotating the pad 90 degrees and take it off (as shown in Fig. 7-1 & 7-2)
- 7-4. Replace a new pad (as shown in Fig. 7-2) and rotate it back 90 degrees and position. (As shown in Fig. 7-3)
- 7-5. Repeat step 4-1, 6-7 and 6-8 to complete the installation

Notes:

1. Please keep brake pads clean and oil free. Once it's contaminated, please replace the pads immediately.
2. If any squealing sound appears while braking, it means that the brake pads are worn out or torn.

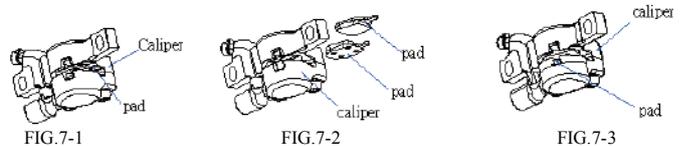


FIG.7-1

FIG.7-2

FIG.7-3

8. Caution of adding brake oil and replacement

- 8-1. When the levers work loose, but still with braking function, that maybe not enough DOT4 brake oil, so after adding the DOT4 brake oil, the levers will work tightly.
- 8-2. In order to maintain braking performance, DOT4 brake oil should be replaced once a year.
- 8-3. DOT4 brake oil using only. (DO NOT use or mix DOT 5 series and any other brake oil)
- 8-4. When replacing the brake oil, avoid touching the brake caliper or brake pads. If you do touch them with any brake oil, please clean those parts immediately. If other components were contaminated, please wipe them down as well.
- 8-5. Properly dispose of the used brake oil.
- 8-6. Must-follow "DOT 4 brake oil bleeding" instruction