

## 1. General Warning and Precautions:

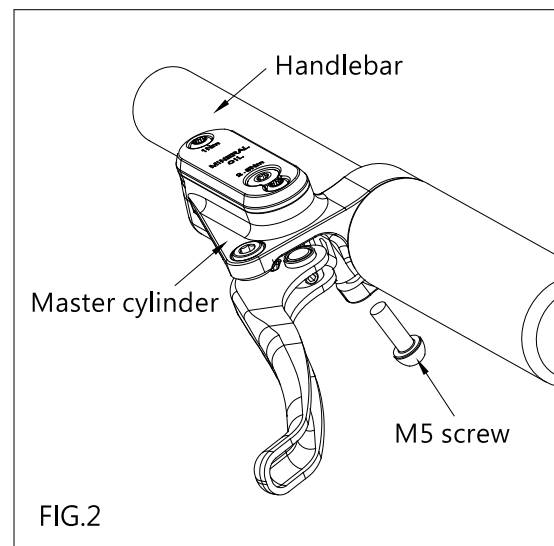
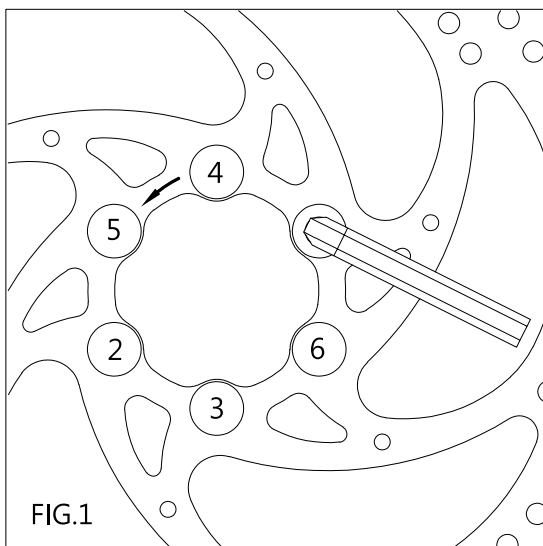
- Bengal hydraulic disc brakes are specifically designed for cycling usage. Bengal cannot guarantee product warranty if assembled on alternative transportation modes. Improper installation of Bengal Disc Brakes may cause accidents, so please be cautious.
- Before riding, please make sure the hydraulic disc brakes are working properly and that the brake pads do not need to be replaced.
  - \* Always wear a helmet when riding.
- Knowing how to use a hydraulic disc brake system is crucial. Incorrect use can lead to reduced braking power, accidents, and injuries. Ensure you're fully familiar with the correct operation before riding.
- Bengal hydraulic disc brakes provide superior braking power. Gradually test them on a flat surface to adjust the braking strength. If sharing your bike, ensure the other person is also familiar with the braking power before riding.
- Avoid touching the caliper and rotor after riding to prevent burns from post ride heat. Ensure they cool down before handling, repairing, or adjusting.
- Consult a qualified technician/mechanic and use the correct tools for all installations or adjustment.

## 2. Installation & adjustment

Tools required: T25 Torx wrench, 2-3-4-5mm Allen wrench

### ● Installation of Rotor

- Wipe the rotor and hub mounting surface with isopropyl alcohol.
- Install rotor on the hub's installation side, ensuring the wheel's rotation matches the arrow's direction on the rotor.
- Using T25 Torx wrench, tighten the six M5 rotor screws to the hub. Make sure to follow the sequence of (FIG.1).  
Tightening torque: 6~8Nm (53 ~ 71 in. lbs.)



### ● Installation of Master cylinder

- Using average strength, tighten M5 screw to handlebar with 4mm hex wrench. Adjust angle to appropriate position and tighten it to a torque of 4-6Nm (35~53 in. lbs.). (FIG.2)

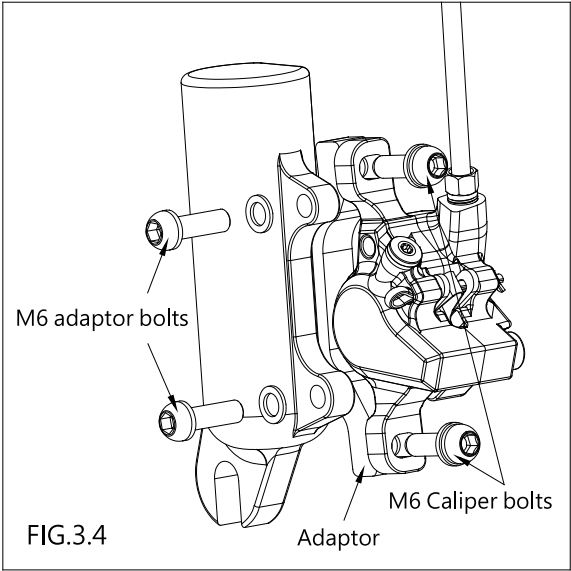
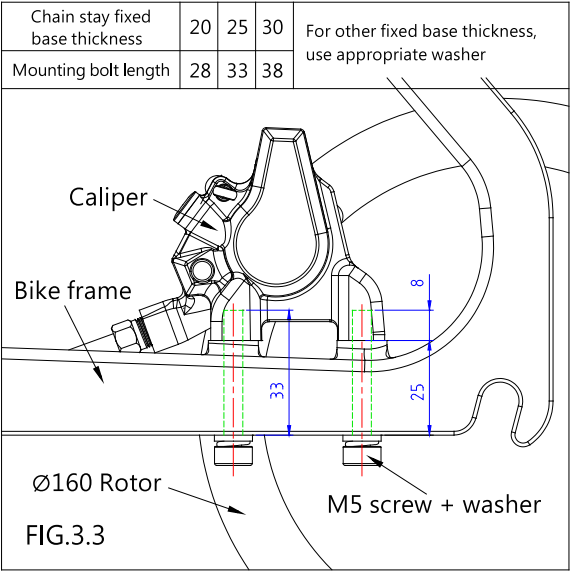
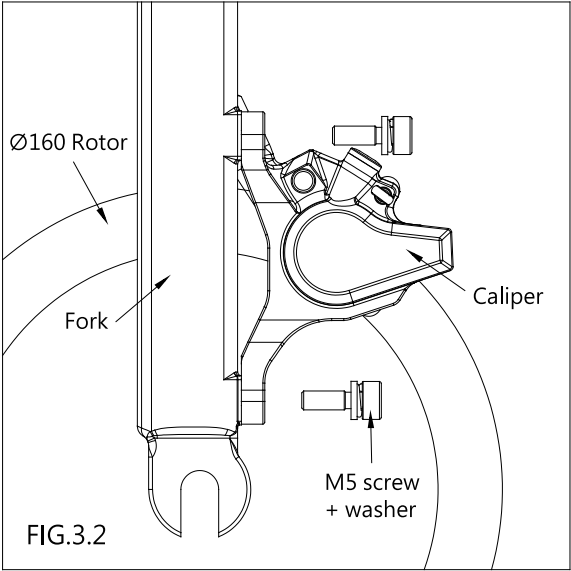
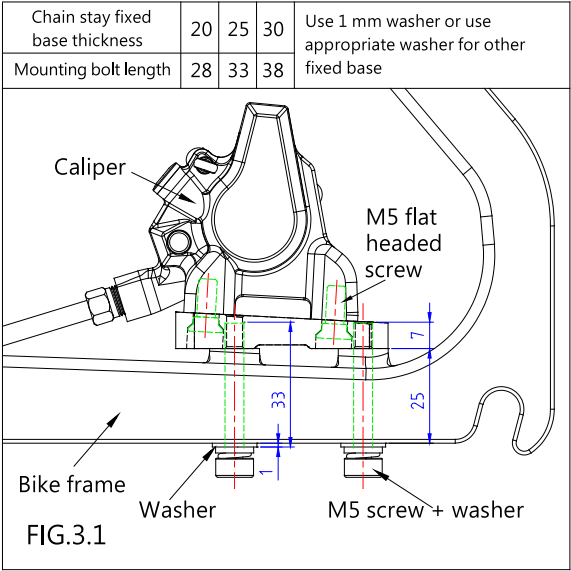
● **Installation of Adaptor**

- 1) To install the Bengal flat mount hydraulic disc brake, place an appropriate adaptor on the front fork or frame using M5 adaptor fixing bolts & washers, at a torque of 5~7Nm (44~61 in. lbs.). (FIG.3.1)

Note: Bengal flat mount hydraulic disc brakes can be mounted, with an adaptor, on front forks and frames with a 70&34 mm flat mount spec. or without an adaptor for flat mount installation. (FIG.3.2-3.3)

- 2) To install the Bengal hydraulic disc brake, place an appropriate adaptor on the front fork or frame using M6 adaptor fixing bolts & washers , at a torque of 8~10Nm (71~89 in. lbs.). (FIG.3.4)

Note: Bengal hydraulic disc brakes can be mounted, with an adaptor, on front forks and frames that use the 51mm international standard or without an adaptor for post mount installation.



● **Installation of Caliper**

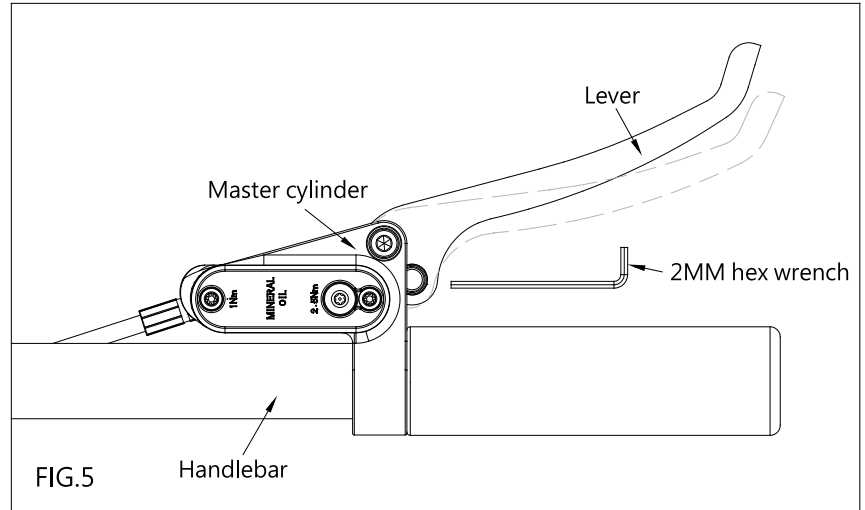
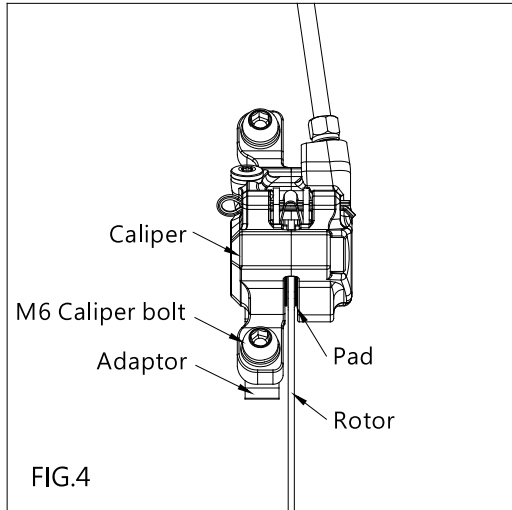
- 1) Flat Mount - Install caliper on the adaptor by tightening the M5 caliper fixing bolts and washers loosely. The calipers should swivel slightly left and right, used for fine tuning & adjusting their position. (As shown in FIG.3.1-3.2-3.3).

Note: The length of the M5 caliper screws + washers used on the rear wheel of the frame need to match the thickness of the chain stay fixed base. Add 1mm or 2.5mm washers to adjust the combination to prevent the effective thread from being insufficient or exceeding the size. The effective thread for direct mount is 8mm (FIG.3.3), and the effective thread for locking with adaptor is 7mm. (FIG.3.1)

- 2) Post Mount - Install the caliper on the adaptor by tightening the M6 caliper fixing bolts and washers loosely. The calipers should swivel slightly left and right, used for fine tuning & adjusting their position. (As shown in FIG.3.4)

- **Adjustment of disc brake position**

- 1) Gently pump the lever several times, and then hold steady, which makes the caliper clamp the disc and adjusts to the middle position of the disc (FIG.4), tighten M6 caliper fixing bolts at a torque of 8~10 Nm (71~89 in. lbs.).



- 2) Check for any noise or abnormal friction by turning the wheel. If detected, loosen M6 caliper fixing bolts, repeat Step 1), and adjust the caliper position until it turns freely without friction noise. (FIG.4) Adjust the holding space between the lever to fit your personal choice by using a 2mm hex wrench. (FIG.5)

Note: It is recommended to test the braking system at a low speed before going at higher speeds.

### 3. REPLACING THE PADS

Keep pads and rotor clean, free from oil or hydraulic fluid. Replace contaminated pads with new ones. Brake pads are designed for optimal use with the BENGAL hydraulic disc brake system.

- **Removing the brake pads**

- 1) Loosen the caliper fixing bolts and take off calipers.
- 2) (FIG.6) The disc brake pads & spring are fixed by cotter pin. Take out the cotter pin to dislodge brake pads.
- 3) It is suggested to push brake pads and spring out gently with an Allen wrench tip.
- 4) Clean the caliper and piston. Make sure the piston is free of contaminants before pushing the piston back into position. Pushing smoothly and slowly from the center of the piston.

- **Installing the brake pads**

- 1) Position brake pad and spring to correct direction. (FIG.6)
- 2) Place brake pads and spring in the caliper, aligning with the pinhole (FIG.6), insert the cotter pin and bend longest end 45 degrees to secure it. (FIG.6)

#### NOTE

- 1) New pads require about 10 full stops to achieve their optimum braking power.
- 2) When worn out to 2.5mm, replace with new pads.

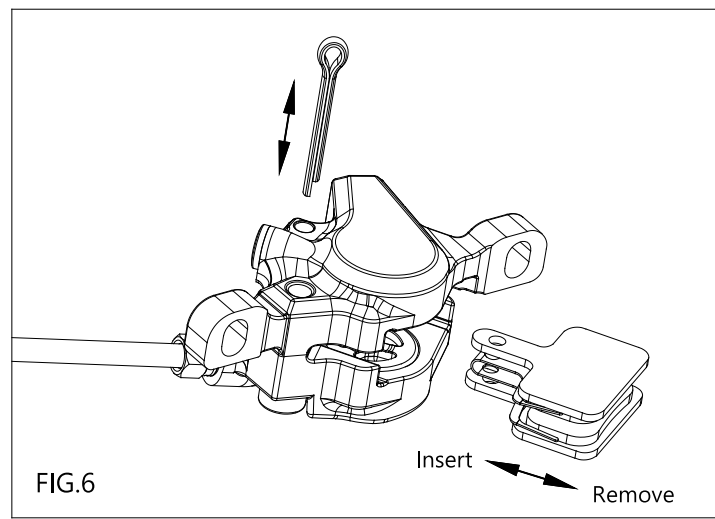


FIG.6

#### 4. Caution of adding brake oil and replacement

- If levers feel spongy but still brake, it might be due to insufficient brake oil. Ensure levers are tight after adding oil.
- In order to maintain braking performance, brake oil should be replaced once a year.
- The ARES series uses MINERAL brake oil only. (Do not mix with any other braking oil)
- Avoid oil contact with brake pads, body, or other parts during oil replacement. If oil accidentally touches your body, clean it with alcohol. Wipe clean brake oil that comes in contact with other brake parts.
- Properly dispose of the used brake oil.

#### 5. Others Cautionary Measures

If you see "2.3mm rotor only" on your hydraulic disc brake calipers (FIG.7), replace the brake pads and rotors according to the original setup for each model. More details on 2.3mm rotors can be found on the BENGAL website.

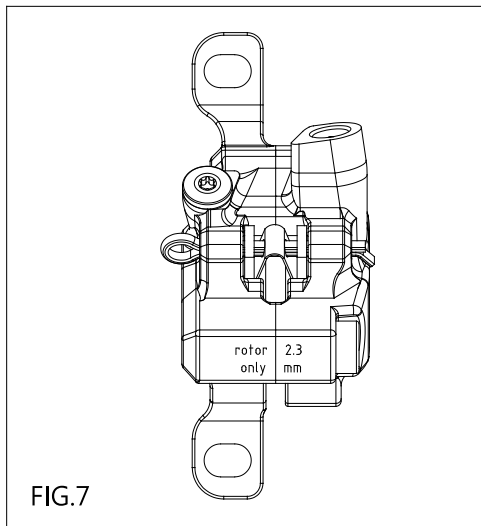


FIG.7

#### Rotor replacement:

2.3mm thickness rotor should be replaced if worn to 1.9mm thickness.

1.8mm thickness rotor should be replaced if worn to 1.5mm thickness.

