



# Ball-Bearing Mechanical Disc Brake Installation Guidelines



**FOLLOW THESE INSTRUCTIONS CAREFULLY. IF YOU DO NOT UNDERSTAND THE INSTRUCTIONS, HAVE THE INSTALLATION DONE BY A PROFESSIONAL BIKE MECHANIC.**

Only levers designated for side-pull brakes, such as the Ultimate L, Speed Dial Series and AD 3 levers can be used with the Avid Mechanical Disc brake. For best operation and performance Avid highly recommends that you use an Avid Speed Dial lever and premium quality brake cable and housing. Failure to do so will reduce the performance of the system.

Avid Disc brakes are compatible with 44mm, 6-bolt, International Standard hubs.

We recommend 32 or 36 spoke wheels with a 3 or 4 cross spoke lacing pattern  
**DO NOT USE RADIALLY SPOKED WHEELS.**

## WARNING

DO NOT TOUCH THE BRAKING SURFACE OF THE ROTOR WITH YOUR BARE HANDS. WEAR GLOVES, OR HANDLE THE ROTOR BY THE SPOKES. OILS FROM YOUR FINGERS WILL DEGRADE THE PERFORMANCE OF ANY DISC BRAKE. DISC BRAKES BECOME VERY HOT DURING USE. DO NOT TOUCH THE CALIPER OR ROTOR IMMEDIATELY AFTER USE. MAKE SURE THE BRAKE HAS COOLED DOWN BEFORE MAKING ANY ADJUSTMENTS.

## IMPORTANT

Brakes are a safety-critical item on a bicycle. Improper set-up or use of brakes can result in loss of control or an accident, which could lead to a severe injury.

It's the your responsibility to learn and understand proper braking techniques. Consult the owner's manual for your bicycle and a professional bike dealer. Practice your riding and braking techniques in a controlled environment prior to aggressive riding.

The effectiveness of braking is dependent on many conditions over which Avid has no control including the speed of the bicycle, type and condition of the riding surface, braking lever force, proper installation and maintenance of brakes, cables, levers, brake pads, the condition of the bike, weight of the rider, proper braking techniques, weather, terrain, and a variety of other factors.

## ALWAYS RIDE UNDER CONTROL.

Remember, it takes longer to stop in wet conditions. To reduce the possibility of an accident and minimize trail erosion, you should avoid locking-up your wheels.

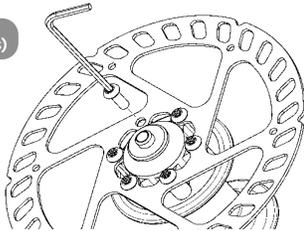
## BRAKE INSTALLATION

**TOOLS NEEDED:** 2.5mm hex wrench, 5mm hex wrench, T-25 TORX® wrench, Adjustable torque wrench [5-10Nm (40-90 IN-Lbs)] range **VERY IMPORTANT!**

### 1 Install the rotor

Mount rotor to hub using supplied T-25 TORX® bolts and tighten to 6.2 Nm (55 In-Lbs). **AVID logo MUST face out.** Install wheel into fork or frame.

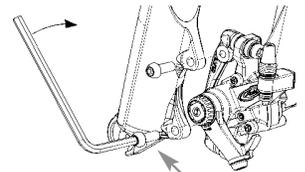
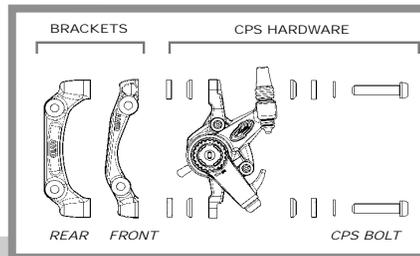
**TORQUE:**  
6.2 Nm (55 In-Lbs)



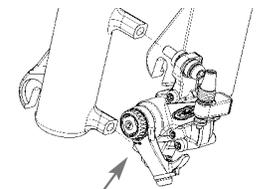
**WARNING** IF YOU ARE USING A HUB WITH A REMOVABLE SHIM - YOU MAY NEED LONGER ROTOR MOUNTING BOLTS. CONTACT THE HUB MANUFACTURER FOR THE RECOMMENDED BOLTS.

### 2 Mount the caliper

Mount the caliper assembly and mounting bracket to the international mounts of the bicycle using the M6 bolts provided and tighten to the torque value - AVID logo facing OUT. Loosen slightly the two CPS bolts that attach the caliper to the mounting bracket. If a Manitou fork is used, remove the mounting bracket, leaving the washer stack intact, discard bracket and install caliper to fork. **DO not tighten the CPS bolts yet.**

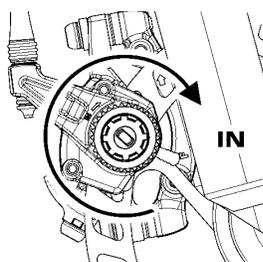


**TORQUE:**  
9-10 Nm (80-90 In-Lbs)

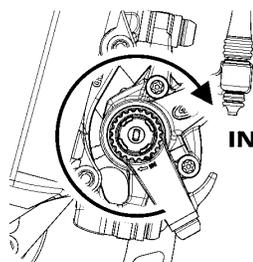


### 3 Align the Caliper

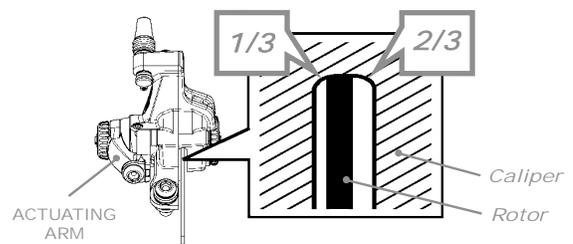
To properly align the brake pads and the caliper to the rotor you must first adjust the inboard (large) pad adjustment knob. The inboard brake pad should contact the rotor when the rotor is properly positioned in the caliper body. To do this, turn the inboard (large) pad adjustment knob, until the pad lightly contacts the rotor. Once the rotor is properly adjusted in the caliper body and the inboard brake pad is contacting the rotor, turn the outboard (small) pad adjustment knob in until it is **firmly** squeezing the rotor against the inboard pad - thus immobilizing the actuating arm. **Never actuate brake while arm is immobilized!**



Inboard pad adjustment knob



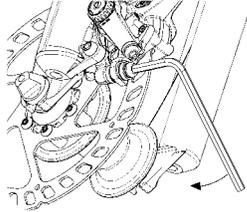
Outboard pad adjustment knob



**Rotor should be offset to the outboard side of the rotor slot. Ideal ratio is 1/3 to 2/3.**

## 4 Tighten the caliper

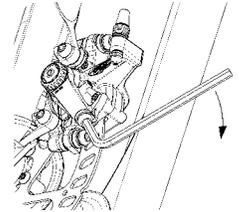
Tighten the two *CPS* bolts that attach the caliper to the mounting bracket. It is best to do so incrementally until both are fully tightened. 8-10 Nm (70-90 In-Lbs).



TORQUE:  
8-10 Nm (70-90 In-Lbs)

## 5 Install the Cable

Pass the brake wire through the actuating arm. Cable slack may be removed with a fourth-hand tool. *Apply only enough force to pull the cable taut\**. Tighten cable anchor screw to 5-7 Nm (40-60 In-Lbs). Use the barrel adjuster at the brake lever to remove any remaining cable slack.



TORQUE:  
5-7 Nm (40-60 In-Lbs)

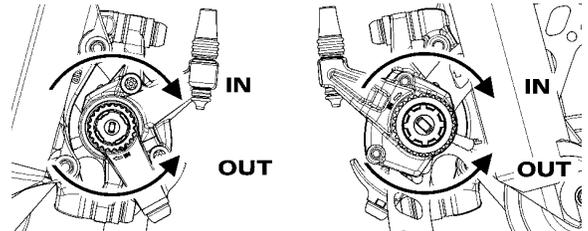
*\*DO NOT pre-stretch the cables.*

*\*DO NOT actuate the brake until the pads have been backed off - see STEP 6.*

## 6 Adjust Brake Pads

Turn both pad adjustment knobs counterclockwise until desired pad/rotor clearance is achieved (approximately 2 or 3 clicks each). Turn the barrel adjuster at the brake lever counterclockwise to remove any slack in the brake cable.

*It is important to only use the barrel adjuster at the brake lever to adjust for cable slack. For lever throw, use the outboard adjustment knob. For brake pad wear adjustment, use both the inboard AND outboard knobs.*



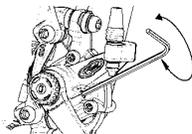
Outboard pad adjustment knob

Inboard pad adjustment knob

## BRAKE ADJUSTMENT AND MAINTAINANCE

### Spring tension adjustment

Using a 2.5mm hex wrench, turn the small spring adjusting screw clockwise to increase spring tension at the lever. Tension is at the lowest setting when there is approximately 2mm of screw thread visible.

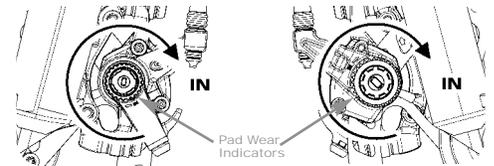


### Cable slack adjustment

Use the barrel adjuster on the brake lever to remove any cable slack from your mechanical disc. Turn the adjuster out until there is no free play in the lever.

### Pad wear adjustment

As with any brake, you will need to compensate for brake wear over time. To do this, turn both inboard and outboard red adjusting knobs **CLOCKWISE** 1 or 2 clicks as needed to restore your brake to optimum settings. *You should NOT use your barrel adjuster to compensate for pad wear.* A pad wear indicator is at the center of each knob. As the knob is turned, the indicator will retract deeper into the knob giving a visual indication of the approximate rate at which your pads are wearing.



### Before each ride

- Check cables for signs of wear or fraying.
- Squeeze the brake lever firmly and check for proper brake function. Adjust for pad wear if necessary.
- Check pads for wear and replace if necessary.
- Make sure rotors are free of foreign substances and oils

### Care and cleaning

Extreme care must be taken when cleaning both the bicycle and its new disc brakes. Under normal use, it is not necessary to clean the caliper rotor or pads. If necessary, use only water and dish detergent to wash the caliper and rotor - being sure to thoroughly rinse all soap residue from the rotor. Dry with a clean paper towel.

### Pad replacement

A pad should be replaced when it's total thickness is 3mm or less. Replace worn disc brake pads by simply lifting the pad away from the piston (i.e. towards the other pad) and then pulling it out away from the other body. *Remove one pad at a time.*

**WARNING** DISC BRAKES ARE OIL SENSITIVE! DO NOT SPRAY ANY SOLVENTS OR LUBRICANTS IN THE VICINITY OF THE ROTORS OR BRAKE PADS. NEVER TOUCH THE PAD SURFACE OR ROTOR SURFACE WITH YOUR FINGERS. DOING SO WILL SIGNIFICANTLY DEGRADE BRAKING PERFORMANCE.

### LIMITED WARRANTY

Avid, LLC (Avid) warrants to the original consumer purchaser of every Avid product that the product shall be free from defects in workmanship and materials for a period of one (1) year from the original date of purchase. The sole remedy under this warranty is limited to, at Avid's sole discretion, repair or replacement of the defective product. Labor and shipping costs are excluded from this warranty. This warranty only applies to the original consumer purchaser and is not transferable.

THIS WARRANTY DOES NOT COVER normal wear and tear (including, without limitation, brake pad wear), or defects or failures that are related in any way to improper installation or follow-up maintenance, accident, abuse or neglect (including, without limitation, thread damage). Since Avid has no control over the product's final use, Avid also does not warrant the suitability of the product for specific riders and/or uses. IN NO EVENT SHALL AVID BE RESPONSIBLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES, WHETHER BASED ON CONTRACT, WARRANTY, NEGLIGENCE, OR STRICT OR PRODUCTS LIABILITY, INCLUDING WITHOUT LIMITATION, PERSONAL INJURY DAMAGES, PROPERTY DAMAGE OR ECONOMIC LOSSES. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you.

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Claims under this warranty may be initiated with any Avid dealer. If this is not practical, you may contact Avid in writing at the address listed below. Dated proof of purchase must accompany all warranty claims.

This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

Should you have any problems with set-up, contact Avid Tech Support for additional assistance at: Toll Free 1-877-526-AVID or TECH@AVIDBIKE.COM

