

Congratulations. You have purchased a Hayes Disc Brake Dyno system. This Manual is intended to provide the information necessary for normal maintenance and service of the Hayes Disc Brake system. Although the steps and procedures are relatively simple, they should not be attempted until you are thoroughly familiar with the entire set of procedures. Images have been provided to help you in the steps and procedures. Bleed instructions can be downloaded from the Hayes Disc Brake Website at [www.hayesbicycle.com](http://www.hayesbicycle.com).

Within this manual are specifically labeled comments intended to bring special attention to a general procedure or detailed step. Be aware of, and understand, the meaning of these labels.

**Warning:** Means that there is the possibility of personal injury to you or to others.

**Caution:** Means that there is the possibility of damaging the brake or the bike.

**Note:** Provides general information.

**Hint:** Provides information that can help you properly complete a specific procedure.

### SAFETY INFORMATION

**Warning:** As a serious rider you are well aware of the need to practice safety in all aspects of the sport. This includes service and maintenance practices as well as riding practices. Before each ride, always check your brakes for proper function and the brake pads for wear. When you ride, always wear a helmet.

**Warning:** When you need to install any of the disc brake components, that installation work should be done by a qualified technician with the proper tools. Improper installation could cause severe or fatal injuries.

**Warning:** This brake has been designed for use on a single person mountain bike. The use on any other vehicle or device will void the warranty and can cause serious injury.

**Warning:** With use, disc brake components may become very hot. Always allow components to cool before attempting to service your bike.

**Warning:** When following any of the procedures below, be sure to keep your hands and fingers from getting caught in the disc. Failure to do so could result in injury.

**Warning:** For riders using the brakes in downhill conditions, it is recommended that you use the 8" disc version of the Hayes Brake. Not all frames and forks will accept an 8" disc. Please check with your frame or fork manufacturer for 8" disc compatibility. Consistently using the 6" disc in downhill conditions may cause the brake fluid to boil.

**Warning:** If your bike is involved in a fall or crash it is recommended you check your brakes before riding to ensure they are functioning properly. The following checks should be performed: Check that all components are securely mounted to the handlebar, frame, fork, or wheel; check for proper pad installation and retention; check that the brake builds and holds pressure; check hose and fittings for kinks or leaks; check master cylinder body and caliper for damage. Always have a qualified bike mechanic check your brakes if you suspect damage.

### GETTING STARTED

#### Personal Preference and Adjustment

In most cases, the disc brake system has been pre-assembled for your bike. However, there are several adjustments that you can make to match your particular physical characteristics or personal preferences.

- **Positioning the Master Cylinder and Lever**

1. Using a 5mm Allen wrench, loosen the lever clamp pinch bolt. (FIG. 1)
2. Position the Master Cylinder to your preference and tighten down the lever clamp pinch bolt to 30±5 in-lb (3.38±.5Nm).

- **Lever Reach Adjustment (Dyno Comp Only)**

1. Using a 2mm Allen turn the lever reach adjust screw at the base of the lever. (FIG. 2)
2. Turning it clockwise will move the lever out. Turning it counterclockwise will move the lever in. Do not force the screw beyond its limits.

- **Recommended Fluids and Lubricants**

Use only DOT 3, DOT 4, and DOT 5.1 brake fluid. Do not use any petroleum-based lubricants, as this will cause the rubber parts to swell. Clean the disc and pads only with isopropyl alcohol.

- **Burnish**

Disc brakes require a special burnish period to achieve maximum braking power. The burnish period lasts for about hard 30-50 stops. During this period some noise may occur.

### INSTALLATION

#### A. Tools Required

- Torx T25 driver
- Open-end wrenches: 10mm
- Allen Drivers: 5mm
- Torque Wrench

#### B. Mounting the Disc to the Hub

**Note:** Mounting the brake disc to the wheel is a simple matter, but one that requires care. If the wheel has to be rebuilt, have it done by a qualified technician using a 3 cross spoke pattern. We recommend the use of a steel quick release skewers only.

1. Clean the disc and hub mounting surface with isopropyl alcohol (not disc brake cleaners).
2. Place the disc on the hub mounting surface. Be sure that the arrow on the disc is pointing in the same direction of the forward wheel rotation.
3. Using a Torx T25 driver, install, tighten, and torque the disc screws to 50±5 in-lb (5.65±0.55Nm), in a star pattern sequence. (FIG. 3)

**Warning:** The disc should be periodically inspected for wear and damage. The minimum disc thickness is 1.52mm

#### C. Mounting the Caliper to the Frame or Fork

**Warning:** When following any of the procedures below, be sure to keep your hands and fingers from getting caught in the disc. Failure to do so could result in injury.

1. Remove the wheel(s).
2. For some installations it will be necessary to mount a mount bracket to accept the Hayes Disc Brake caliper. Mount the mount bracket to the frame or fork using (2) M6 x 1.0 18.4mm long mount bolts. Torque the bolts to 80±5 in-lbs (9.0±0.5 Nm).
3. Mount the caliper to the frame or mount bracket using (2) M6 x 1.0 18.4mm long mount bolts and (2) mount washers. Snug the bolts, but leave them loose enough so that caliper will move on its slots. (FIG. 4)
4. Re-install the wheel(s).
5. Squeeze and hold the brake lever. While squeezing the lever, tighten the mounting bolts. Torque the bolts to 80±5 in-lbs (9.0±0.5 Nm).

**Warning:** Do not adjust the caliper while the caliper is hot.

**Warning:** Do not adjust the caliper while the wheel is spinning.

6. Release the lever, spin the wheel. Check that it spins freely and that the gaps, between the pad and the disc, are equal. If the gaps are unequal, or if there is drag, readjust the caliper position by loosening the mounting bolts and adjusting the caliper as needed. **Hint:** A white piece of paper can be used as a background to help sight down the disc looking for equal clearance between the pads and disc.
7. When the gaps are equal and the wheel spins freely (without drag), torque the mounting bolts to 80±5 in-lbs (9.0±0.5 Nm).
8. Repeat above procedure for other wheel.

#### D. Piston(s) Pumped Out

If the brake lever is stroked without the disc between the pads (this is possible when brake pads are being changed), the self-adjusting feature will allow the pads to push out. The caliper pistons will be pumped out of their bore. This can cause excessive drag on the disc when the wheel and disc are reinstalled, or even make it impossible to install the wheel and disc.

To fix this problem:

1. Remove the brake pads from the caliper if they are not already removed.
  2. With the pads removed, push back the pistons until they are flush with the edge of the caliper using the box end of a 10mm wrench.
- Hint:** If the pads are pushed together tight, slide the travel spacer, or Hayes Feel 'R Gauge between the pads and enlarge the gap until it is large enough to pull the pads out.
3. When the pistons are back into their bores, replace the pads.

#### E. Brake Pad Change

Due to wear, contamination, or damage, the brake pads will, on occasion, need to be replaced. The following procedure is to be followed for a change of brake pads:

1. Removing the pads.
  - a. Remove the wheel.
  - b. Remove the pad retaining pin from the caliper. This will either be a cotter pin that you will unbend and slide out or a pin that requires a 2.5mm Allen wrench to unthread from the caliper body.
  - c. Remove pads and sandwich spring through the window on the bottom of the caliper.
  - d. Using the boxed end of a 10mm wrench, push the caliper pistons back in their bores until they are flush with the edge of the caliper. This will give you more room to insert the new pads.
2. Installing the pads.
  - a. Assemble the pads and sandwich spring. (FIG. 5)
  - b. Compress the pads together on the sandwich spring and insert through the bottom of the caliper.
  - c. Insert pad retaining pin through the hole in the caliper and through the tab on both pads.
  - d. If you have the cotter pin retainer, bend down the ends so the pin cannot be removed. If you have the Allen bolt pin, tighten the pin down using a 2.5mm Allen wrench. Tighten to 18±2 in-lbs (2.0±0.2 Nm)
  - e. Install the wheel.

#### F. Cleaning and Care

The brake disc and pads should only be cleaned with isopropyl alcohol (not disc brake cleaner).

### Dyno Bleed Instructions

1. Remove the brake pads and reset the caliper pistons to their home position.
2. Remove the bleed port plug on the caliper and attach the threaded fitting to the caliper, and then attach a full squeeze bottle to it.
3. Position the master cylinder assembly so that the reservoir cap is parallel with the ground and attach the overflow bottle to the master cylinder by removing the T10 bleed port screw and threading in the Prime/Stroker/Dyno bleed fitting. Keep the handlebar clamp loose.
4. Start pushing fluid. After 30seconds or so, rotate the lever down to 6 o'clock and continue pushing fluid through the system.
5. When no more air comes out of the master cylinder assembly, close the red clip on the master cylinder over flow hose, and then open the bleeder bottle to equalize the pressure inside the bottle with the rest of the room.
6. Remove the squeeze bottle and install the bleed port plug. Tighten to 12±2 in-lbs (1.36±0.23 Nm)
7. Remove the overflow bottle from the master cylinder bleed fitting, then remove the bleed fitting. Install the bleed port screw while the lever is still in the 6 o'clock position.



FIG. 1



FIG. 2

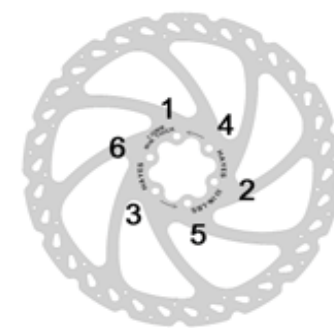


FIG. 3



FIG. 4



FIG. 5



FIG. 6



FIG. 7



FIG. 8

### INSTALLATION AND ASSEMBLY TORQUE VALUES

Part	Torque (in-lb)	Torque (Nm)
Disc Screw	50±5	5.6±0.5
Mount Bolt	80±5	9.0±0.5
Reservoir Cap Screw	4.8±0.5	0.5±0.05
Master Cylinder Clamp Screw	30±5	3.4±0.5
Caliper Bridge Bolt	190±5	21.5±0.5
Bleed Screw	12±2	1.4±0.2
Compression Nut	70±5	7.9±0.5
Pad Pin	18±1	2.0±0.2

### WARRANTY INFORMATION

Any Hayes Bicycle Group component found by the factory to be defective in materials and/or workmanship within two years from the date of purchase will be repaired or replaced at the option of the manufacturer, free of charge, when received at the factory with proof of purchase, freight prepaid. Any other warranty claims not included in this statement are void. This includes assembly costs (for instance by the dealer), which shall not be covered by Hayes Bicycle Group. This warranty does not cover breakage, bending, or damage that may result from crashes or falls. This warranty does not cover any defects or damage caused by alterations or modifications of new Hayes Bicycle Group parts or by normal wear, accidents, improper maintenance, damages caused by the use of parts of different manufactures, improper use or abuse of the product, or failure to follow the instructions contained in an instruction manual for the specific component. Any modifications made by the user will render the warranty null and void. The cost of normal maintenance or replacement of service items, which are not defective, shall be paid for by the original purchaser. This warranty is expressly in lieu of all other warranties, and any implied are limited in duration to the same duration as the expressed warranty herein. Hayes Bicycle Group shall not be liable for any incidental or consequential damages. If for any reason warranty work is necessary, return the component to the place of purchase. In the USA, contact Hayes Bicycle Group for a return authorization number (RA#) at (888) 686-3472. At that time, instructions for repair, return, or replacement shall be given. Customers in countries other than USA should contact their dealer or local Hayes Bicycle Group distributor.