

Congratulations. You have purchased a Hayes Disc Brake Prime 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. Complete Service 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. If the master cylinder is already on the handlebar, loosen, but do not remove, the handle bar clamp screws.
  2. Position the master cylinder and lever on the handlebar in your desired position.
  3. Tighten the upper clamp screw (The upper side of the clamp has a logo) until both pieces of the clamp make contact. (Figure 1)
  4. Torque the lower handlebar clamp screw to 30±5 in-lbs (3.37±0.55Nm) (Figure 2)
- **Caliper Hose Routing**  
The banjo on the caliper can be rotated to accommodate your frame or fork. (Figure 3) Loosen the banjo bolt 1/4 turn and rotate the banjo to the desired location. (Note: loosening the banjo more than 1/4 turn may introduce air in the system). Tighten the banjo to 45± 5 in-lb (6.1±0.55 Nm) for an aluminum banjo bolt (Prime Pro) and to 60± 5 in-lb (6.78±0.55 Nm) for a steel banjo bolt (Prime Expert) .
- **Lever Reach Adjustment ( Figure 4)**  
Adjust the brake lever reach by turning the reach adjustment knob. Turning the knob counter clockwise will adjust the lever closer to the handle bar. Turning the knob clockwise will adjust the lever farther from the handle bar. Do not attempt to force the adjustment screw beyond its limits.
- **Contact Adjustment (Figure 4)**  
The Contact adjustment, or Dead Stroke adjustment, changes the point in the lever stroke where the pads contact the disc. Turn the adjuster in a clockwise manner to decrease the lever travel.
- **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: 6mm, 8mm, 10mm
- Allen Drivers: 2.5mm, 4mm, 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. (Figure 5)

**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 HB 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.
4. Re-install the wheel(s).
5. Squeeze and hold the brake lever. While holding the brake lever, shake the caliper to position it in its natural centered position over the disc. 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. (Figure 7)

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. With a 2.5mm Allen wrench remove the pad pin from the caliper.
  - c. Remove the pads and sandwich spring from the window in the top of the caliper. (Figure 8)
  - d. Using the boxed end of a 10 mm wrench, push the caliper pistons back until they are flush with the edge of the caliper. This will give you more room to fit in the new pads.
2. Installing the pads...
  - a. Assemble the pads, and sandwich spring.
  - b. Compress the pads together on the sandwich spring and slide into the caliper from the top of the caliper.
  - c. Insert the pad pin through the hole in the caliper and through the tab on both pads.
  - d. Using a 2.5mm Allen wrench, tighten the pad pin to 10±12in-lbs (1.1±0.1 Nm)
  - e. Install the wheel.



Figure 1. Tighten the side of the clamp with the Prime logo until there is no gap.



Figure 2. Torque the lower handlebar clamp screw to 30±5 in-lbs (3.37±0.55Nm)



Figure 3. Loosen the banjo bolt to adjust the hose angle.

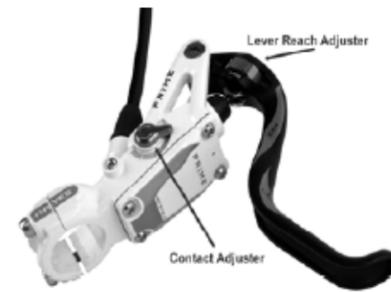


Figure 4. Contact (dead stroke) and lever reach adjustment.

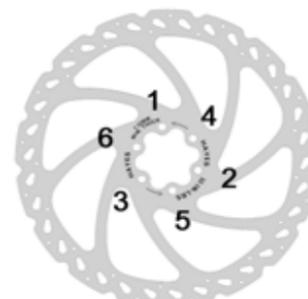


Figure 5. Disc screw tightening sequence.



Figure 6. Mounting the caliper to the frame.

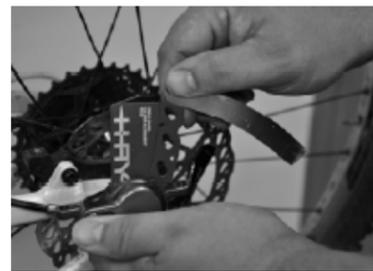


Figure 7. Pushing back pumped-out pistons.



Figure 8. Removing pads and sandwich spring.



Figure 9. Brake pads, sandwich spring and pad retaining pin.



Figure 10.

#### F. Cleaning and Care

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

Periodically the Prime lever pushrod pin may require lubrication to maintain quiet operation.

- a. Adjust lever reach to the maximum or furthest setting from the handlebar.
- b. Apply one drop of a wet chain lubricant or penetrating oil to the black lever pushrod pin when needed or after riding in wet or dusty/muddy conditions. (Fig. 10)
- c. Cycle or squeeze lever blade a 2-3 times.
- d. Adjust lever blade back to your preferred setting.

### INSTALLATION AND ASSEMBLY TORQUE VALUES

Part	Torque (in-lb)	Torque (Nm)
Banjo Bolt, Aluminum	45±5	5.1±0.5
Banjo Bolt, Steel	60±5	6.8±0.5
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
Bridge Bolt, Steel	190±5	21.5±0.5
Bridge Bolt, Titanium	220±10	24.9±1.1
Bleed Screw	12±2	1.4±0.2
Compression Nut	70±5	7.9±0.5
Pad Pin	10±1	1.1±0.1
Pivot Bolt	40±4	4.5±0.5
Pivot Nut	10±1	1.1±0.1
Reach Adjust Screw	18±2	2.0±0.2
Pushrod	7±.5	0.7±0.05

### 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 manufacturers, 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.