MECHANICAL DISC BRAKE INSTALLATION

CX/MX SERIES

This manual is intended to provide the information necessary for installation, set-up, normal maintenance and service of Hayes Mechanical Disc Brake systems. We highly recommend installation be performed by a qualified mechanic. These instructions can be downloaded from the Hayes Disc Brake website at www.hayesbicycle.com.

SAFETY INFORMATION

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.

Caution: 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: Do not adjust the caliper while the wheel is spinning.

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

Warning: If your bike is involved in a fall or crash it is recommended your brakes are checked by a qualified mechanic 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 master cylinder body and caliper for damage. Always have a qualified bike mechanic check your brakes if you suspect damage.

INSTALLAION

Tools Required

- Torx T25 driver
- Cable Cutters
- Hex Wrench: 2mm, 5mm
- Torque Wrench
- Safety Glasses
- Hayes Feel'r Gauge (optional)

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
Cable Anchor Screw	60±5	6.8±0.5
Cable Anchor Screw (MX COMP)	70±5	7.9±0.5

Mounting the Disc to the Hub

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. 1)**

Caution: The disc and pads should be periodically inspected for wear and damage. The minimum disc thickness is 1.52mm. The minimum pad thickness is 0.25mm.

Mounting the Caliper to Frame or Fork

NOTE: IF your brake caliper has the Crosshair Alignment System please refer to the Crosshair Installation instructions on our website.

1. For some installations it will be necessary to mount a bracket to the frame or fork to accept the Hayes Mechanical Brake. Mount the bracket to the frame or fork using (2) M6 x 1.0 x 18.4mm mount bolts. Torque the bolts to 80±5 in-lb (9±0.5Nm).
2. Mount the caliper to the frame or fork adapter using (2) M6 x 1.0 x 18.4mm long mount bolts and (2) mount washers. Snug the bolts, but leave them loose enough so that the brake caliper will move on its slots. **(FIG. 2 & 3)**
3. Re-install the wheel.
4. Set lever reach adjustment per the lever manufacturer's instructions. Doing this first prevents this adjustment from affecting other adjustments.
5. Install the cable through the brake lever and spin the lever adjusting barrel down tight to the closed position.
6. Install the cable through its housing and through the cable anchor screw and washer.
7. Seat the cable housing snugly at the brake lever and the brake caliper.
8. Pull the cable wire tight and tighten the cable anchor screw to 60±5 in-lbs (6.8±0.5Nm). If the brake is the MX Comp, tighten cable anchor screw to 70±5 in-lbs (7.9±0.5Nm)
9. Insert Feel'r Gauge so that the rotor is sandwiched between the gauge and tighten the inboard pad adjuster tight, holding the gauge to the rotor. Lightly tighten each mount screw, alternating between each bolt until final torque is achieved. Hint: If you do not have the Hayes Feel'r Gauge, you can use two business cards, one on each side of the rotor.
10. Back the inboard adjuster off to release the Feel'r Gauge.
11. 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. **(FIG. 4)** 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 the disc.
12. Trim the excess cable and crimp a cable end on the end of the trimmed cable. **(FIG 5)**
13. When the gaps are equal and wheel spins freely (without drag), torque the mounting bolts to 80±5 in-lbs (9.04Nm). For post mount forks, torque the mounting bolts to fork manufacturer's specifications.

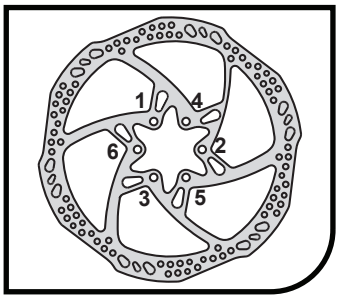

FIG. 1


FIG. 2


FIG. 3

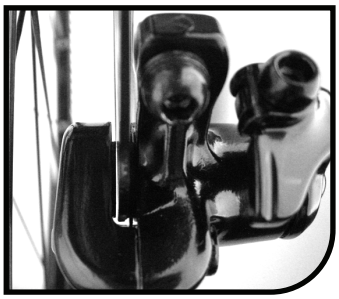
FIG. 4


FIG. 5

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MAINTENANCE & TROUBLESHOOTING

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. Using a 5mm hex wrench, turn the inner pad adjuster counter clock-wise until one engagement thread is exposed.
   C. Using a needle nose pliers, remove the outer pad first by pulling the tab in the center of the pad backing plate toward the center of the caliper and out. The pad is held in with a magnet.
   Note: The outer pad is the pad away from the wheel.
   Note: If you do not remove the outer pad first, you will not be able to remove the pads.
   D. Repeat step 3 for the inner pad.
   Note: The inner and outer brake pads are identical.
2. Replacing the pads.
   A. Using a needle nose pliers, install the inner pad first. Use the tab in the center of the pad backing plate to push the new pads into place. Angle the pad slightly until the force of the magnet pulls the pad into place.
   B. Now repeat the procedure for the outer pad.
   C. Install the wheel.
   D. Using a 5mm hex wrench, adjust the inner pad adjuster to the proper gap.
   Note: See installation instructions above for proper set-up.
3. Burnish brake pads. Performing the proper burnish process is essential to ensure that your new brakes have consistent, high power braking in all riding conditions. Hard braking before proper burnish can result in a reduction in brake performance. A proper burnish, or break in process of 50+ stops under 15 mph or 24 Km/h is required in order to reach full braking power.

Pad Maintenance & Adjustment

As pad material wears down you will need to adjust the spacing between each pad and the rotor. The space between pad and rotor should be 0.3mm.
WARNING Adjusting only one side can lead to brake failure. Do not use the cable anchor screw to compensate for pad wear.

1. Using a 2mm hex wrench, unthread the inboard pad adjuster set screw **(FIG.6, B)**. Use a 5mm hex wrench to adjust the inboard pad adjuster **(FIG.6 A)**. Tighten down the set screw until it hits the inboard pad adjuster.
2. Adjust the outboard pad using the barrel adjuster **(FIG.6, C)**. If the barrel adjuster is unthreaded all the way, release cable tension and rethread the barrel adjuster as shown in **FIG.6, C**. Loosen the caliper mount bolts, reposition the caliper to set the outboard pad gap, follow step 1 to set the inboard pad gap, and finally set the cable tension. Make sure the caliper arm is fully opened **(FIG. 7). DO NOT** preload the caliper arm **(FIG. 8)** while setting cable tension.

Note: Do not only adjust cable tension to compensate for pad wear.
After replacing pads check for contact between the pads and rotor. If there is contact repeat steps 1 & 2 again.
Note: If your caliper does not have a barrel adjuster, unthread the mounting bolts and slightly shift the caliper location on the frame/fork to achieve even space between the pad and the rotor.

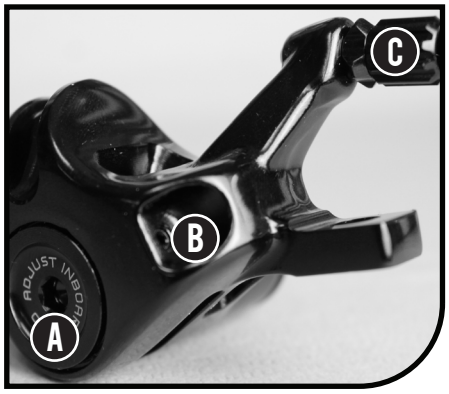

FIG.6

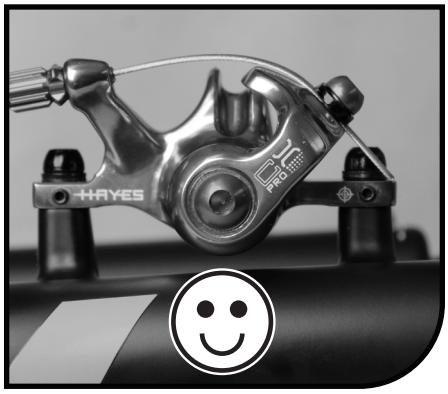

FIG.7

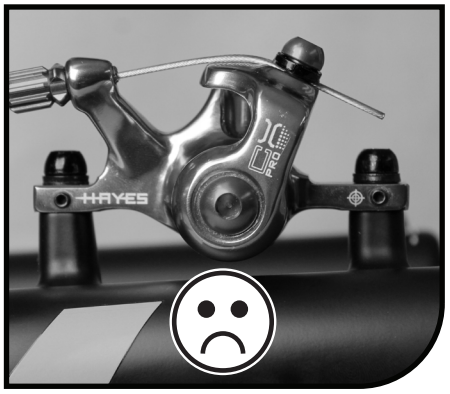

FIG.8

Cleaning and Care

The brake disc should only be cleaned with Isopropyl alcohol (not disc brake cleaner). Contaminated brake pads should be replaced.

WARNING:
As with all mechanical components, all HAYES components are subjected to wear and high stresses. Different materials and components may react to wear, impact, and/or stress fatigue in different ways. Any form of cracking, scratches or change of coloring in a highly stressed area indicates that the life of the component has been reached and should be replaced. If the design life of the component has been exceeded, it may suddenly fail, possibly causing injuries or death to the rider.

WARRANTY INFORMATION:
HAYES warrants its products to be free from defects in materials or workmanship under normal intended use for a period of one year (two years in European Union countries) from the date of purchase, subject to normal wear and tear. Unless otherwise prohibited by law, any such defective products will be repaired or replaced at the option of HAYES when received with proof of purchase, freight prepaid. 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 HAYES products or by normal wear, accidents, improper maintenance, damages caused by the use of HAYES products with parts of different manufacturers, improper use or abuse of the product, application or uses other than those set forth in the HAYES instruction manual or failure to follow the instructions contained in the applicable HAYES instruction manual. Instruction manuals can be found on-line at www.hayescomponents.com. Any modifications made by the BUYER or any subsequent user will render the warranty null and void. This warranty does not apply when the serial number or production code has been deliberately altered, defaced or removed from the product. The cost of normal maintenance or replacement of service items, which are not defective, shall be the BUYER's responsibility. If permitted by local law, this warranty is expressly in lieu of all other warranties (except as to title), express or implied, and in particular and without limitation HAYES disclaims the implied warranties of merchantability or fitness for purpose. If for any reason warranty work is necessary, return the component to the place of purchase or contact your dealer or local HAYES distributor. In the USA, contact HAYES 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 the USA should contact their dealer or local HAYES distributor.

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