

The Following procedures cover the installation of Hayes Disc Brakes items purchased as an aftermarket item. When you need to install any of the disc brake components, a qualified technician with the proper tools should do that installation work. Improper installation could cause severe or fatal injuries.

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

### A. Hose Removal and Assembly

The follow procedures are to be used when replacing or removing the hose.

#### • Master Cylinder Hose Removal

1. To take the hose off of the master cylinder end, slide the nose cone down the hose.
2. Using a 8mm box wrench, remove the hose nut and slide it all the way down the hose.  
Note: sometimes it is best to first cut the hose and use the box end of the 8mm wrench to better grab the 8mm hose nut.
3. Slide the hose out of the end of the master cylinder. There will be some residual fluid in the hose and master cylinder / caliper. Be careful to avoid spilling that fluid.
4. A new hose insert/compression bushing combination will be needed each time the hose is re-installed. Remove the old compression bushing and hose insert by cutting the hose next to the compression bushing. The cut needs to be clean with no frayed ends.

#### • Master Cylinder Hose Assembly

1. Locate the end of the hose without the permanent crimp.
2. Cut the hose to the desired length with good scissors or cable cutters. The cut end must be clean and perpendicular to the hose itself.
3. Slide the nose cone onto the master cylinder side of the hose.
4. Slide the hose nut over the hose.
5. Push the longer end of the barbed hose insert/compression bushing combination into the end of the hose. Be sure it is inserted flush with the end of the hose. Always use a new hose insert/compression bushing combination.
6. Slide the hose into the master cylinder and install the hose nut. Be sure that the hose is inserted completely into the master cylinder end. Be sure the hose remains inserted while tightening.
7. Using a 8mm open-end wrench, torque the hose nut to 70 +/- 5 in/lb.
8. Bleed the system

#### • Caliper Hose Removal

1. To take the hose off the caliper end, remove the banjo bolt using a 4mm Allen wrench.
2. When removing the banjo assembly completely from the caliper, be sure that the two banjo o-rings are not lost.  
Note: The end of the El Camino caliper hose is a permanent crimp. Therefore the connection cannot be trimmed to size or repaired. Shortening of the hose must be done at the master cylinder end. If the caliper hose connection is damaged, the hose must be completely replaced with a new hose with a permanent crimp attached.

#### • Caliper Hose Assembly

1. Install the banjo bolt through the banjo. Be sure that there is a banjo o-ring on each side of the banjo.
2. Position the angle of the banjo to your desired location for your frame or fork.
3. Tighten the banjo bolt to 60 +/- 5 in/lb (6.7 +/- .5 Nm).

### B. Bleeding

Air trapped in the hydraulic system of the disc brakes can decrease performance of the system and should be removed by "bleeding" the system and replenishing the system with new brake fluid. The system is filled by pumping fluid from the lowest point (at the caliper), through the system, to the highest point, the bleeder on the master cylinder.

**Caution:** Use only new DOT 4 or DOT 3 brake fluid from a closed, sealed container. Use of any other fluid can cause the rubber parts to degrade and cause the brake to fail.

**Caution:** DOT 4 or DOT 3 brake fluid will strip paint. Use extreme caution to avoid getting DOT 4 or DOT 3 brake fluid on paint. If DOT 4 or DOT 3 brake fluid comes in contact with paint, wipe it off immediately and rinse with isopropyl alcohol.

**Warning:** If you get any brake fluid on the brake pads, discard them and replace with new pads. If you get any brake fluid on the disc, clean it thoroughly with isopropyl alcohol.

**Warning:** DOT 4 and DOT 3 brake fluid can be an irritant when it comes into contact with human tissue. For skin contact, brake fluid should be washed off in flowing water. For eye contact, the eye area should be irrigated with flowing water immediately and continuously for 15 minutes. Consult with medical personnel. If effects occur from inhaling brake fluid fumes, move to an area with fresh air. Consult a physician. If brake fluid is ingested, induce vomiting and consult medical personnel. Used brake fluid should be disposed of in accordance with local laws.

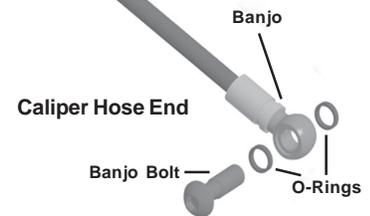
#### • Bleed Kit Assembly

1. Screw the cap onto the end of the bottle.
  2. Cut a 2" section of hose
  3. Push the short section of hose over the cap until it slides past the ridge on the cap
  4. Push the long section of hose into the master cylinder bleed fitting.
- NOTE: There are three fittings with the kit. The black plastic fitting or the threaded metal fitting is to be used with the "El Camino".

#### • Bleeding the System

1. Remove the wheel.
2. Remove the brake pads so that any spilled fluid does not contaminate the pads. (Note: Pad removal instructions can be found at [www.hayesdiscbrake.com](http://www.hayesdiscbrake.com).)
3. Push the caliper pistons all the way into their bores using the box end of a 9mm end wrench.  
Caution: Don't push on the post in the center of the piston because that will bend the post.
4. Position the bike in a stand so that the brake caliper bleeder screw is perpendicular to the ground, and the reservoir bleeder screw on the master cylinder is the highest point on the brake system.  
NOTE: For the "El Camino" the bike should remain horizontal to the ground, and the lever should remain in its normal riding position.
5. Remove the master cylinder bleed screw and press the fitting with the hose into the hole (note: there is one on each side of the master cylinder body, when bleeding only remove the bleed screw pointing up). The other end of the hose should go into a cup or bottle to catch the excess fluid. (Note: you will need to provide your own catch bottle) Be sure not to submerge the end of the hose in fluid.  
Hint: Taping a spoke to a bottle and bending it to hook around the handlebars makes a convenient hanger.
6. Completely remove the caliper bleeder's rubber cap.
7. Fill the plastic filler bottle with fresh DOT 3 or DOT 4 brake fluid.
8. Close the caliper bleeder.
9. Place the hose from the fluid bottle onto the caliper bleeder. Pump the fluid bottle until there is no air in the hose.
10. Open the caliper bleeder 1/4 turn.
11. Squeeze the fluid bottle firmly – forcing fluid into the caliper for a count of five. Stop squeezing until the bottle returns to its natural shape. When the squeeze is released, air should be drawn out of the caliper. Continue alternately squeezing the fluid bottle, for a count of five, and releasing until no air bubbles come out of the caliper.
12. After all the air is out of the caliper; squeeze the bottle until fluid comes out at the master cylinder with no air bubbles.
13. While squeezing the bottle, quickly stroke the lever to the handlebars, and release. Repeat this until no more air bubbles come out of the master cylinder.
14. With the bottle still being squeezed, close the caliper bleeder. Torque should be only to seal the bleeder. Do Not Over-torque! Then release and remove the bottle and filler hose.
15. Remove the hose and fitting from the master cylinder and insert the bleed screw.
16. Clean the caliper and master cylinder with isopropyl alcohol. Take great care to remove all brake fluid because if the fluid comes into contact with the disc or brake pads, performance will forever be greatly reduced.
17. Clean the disc with isopropyl alcohol if it is contaminated with oil or brake fluid.
18. Replace the caliper's rubber bleeder cap, the brake pads, and the wheel/disc assembly.
19. Pump the brake lever to push the pads to the proper location.
20. Center the caliper over the disc.

Master Cylinder Hose End



Bike Positioned On Stand



Master Cylinder Catch Bottle



Caliper / Fluid Bottle