The Preventive Maintenance Series

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Bleeding Corvair Brakes

Bleeding a brake system at the wheels is necessary anytime you replace a component such as a steel line, hose or wheel cylinder. In order for hydraulic brakes to work, only fluid can be present in the system; any air that is present will make the brakes unusable. DOT 3 & 4 fluid (DOT 5 will be discussed later) is not compressible while air will compress and not transfer the pedal pressure to the brake shoes. The shop manual states you should bleed the farthest cylinder first and work back towards the master cylinder. I'm not sure what the reason for that was, since all other sources (and common sense) suggest starting with the wheel cylinder closest to the master cylinder and working away.

If you are only replacing the master cylinder, you can bench bleed it, install it, pump it twice and you are finished. Bench bleeding is accomplished by using the plastic plug and hose supplied with a new unit or simply use your finger(s) as a valve while you stroke it. Air will not get in to the system when you remove the master cylinder since it is at the high point (be careful if you have the nose down hill on an FC).

I have used four different approaches to bleeding wheel cylinders. All get the job done; some are easier, some more expensive. Keep in mind that DOT 3 & 4 brake fluids dissolve most paint, so cover fender and trunk area. Remember to keep all bleeder valves closed except the one you are working with.

1. You can purchase a high dollar pressure bleeder from Snap On and others. A plate adapts to the top of either a single or a dual master cylinder and is fitted with a hose that connects to a remote pressure tank which you fill with fluid. Works great, lets you quickly move from wheel to wheel without checking the master cylinder. With a $400 price tag for both adapters and the unit, it is only practical for a high volume shop or to impress fellow club members with money you got from Nigeria.

2. Use an assistant to bleed brakes. This is a time tested method and work fine with no tool purchase. Have your assistant depress the pedal while the bleeder valve is closed, open the valve briefly and shut it before calling for the pedal to be released. Repeat this while watching for air bubbles to stop flowing out with the fluid. Keep the master cylinder from going dry, and if you did not replace the master cylinder it would be wise to not let the pedal go completely to the floor while pumping; you could push the internal seals into some sludge in the bottom of the cylinder that could cause failure.

3. Use of the one man system using a container and hose. Attach a clear plastic hose (fish tank hose) to the bleeder valve and immerse the other end of the hose in a small amount of brake fluid in a container. The object is to force the air out through the hose by pumping the brake pedal. With the hose end immersed in the fluid, the master cylinder will not be able to suck air back in the line when you

release the pedal. Slowly pump the pedal with a stick while you lean down and watch the fluid come through the tube until the air bubbles stop. Watch the fluid level in the master cylinder.

4. You can use a hand powered vacuum pump to pull fluid through the lines from the master cylinder. In my experience, only the Mityvac brand pump will work properly and last through repeated use. It is sold in a kit containing numerous hoses and adapters. One tip: pump the master cylinder a couple of times with the farthest bleeder open before you start the vacuum process.

DOT 5 (Silicone) brake fluid has been available for hydraulic brake use for a long time, although I do not believe it is installed at the factory for any American cars (Harley Davidson does use it). The main advantage is that you do not have to replace components or flush the system due to moisture since DOT 5 fluid will not absorb moisture (free moisture in DOT 5 fluid can freeze). Silicone fluid will not damage paint which is another plus, but on the down side, silicone fluid will absorb air and can require a substantial amount of bleeding if that happens. If you change to silicone fluid, you must replace every rubber item and thoroughly flush any steel lines not replaced. I recently did this change over in an FC and I did have to do some additional bleeding and reduce the shoe to drum clearance to obtain a good pedal. The cost of DOT 5 fluid is $26 a quart plus tax (2012).

Another note on fluids; some DOT 4 fluids are advertised “high temperature for disc brakes” I suspect this was pure marketing since most drum brakes operate hotter than disc brakes under the same application and the difference in the wet boiling point for the two fluids is 27 degrees F (dry boiling point is 45 degrees F difference).

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Differential Tech Session: If you are interested in the tech session I mentioned last month and have not notified me, please do so as I will need to email the details later. This is tentatively scheduled for Sunday October 21. mdawson1961@sbcglobal.net