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**Classic Performance Products 378 E Orangethorpe Ave., Placentia CA 92870**

## **Project Old School: One-Stop Braking**

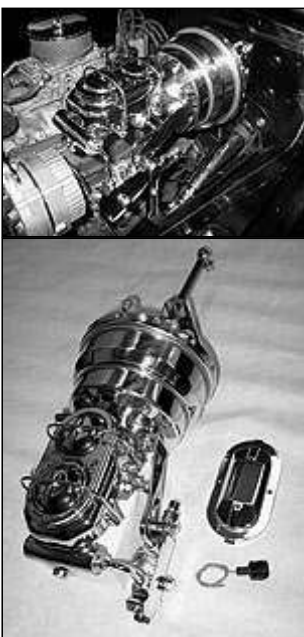
Adding Function and Form With CPP's Premium Booster/Master Assembly

By Jeremy Cook

In my ongoing attempt to make Project Old School a functional driver, this month we focus on changing out the stock single-chamber drum brake master cylinder to something a little more up to date. After all, the stocker contains an internal residual check valve designed to keep about 10 pounds of pressure in the lines so the shoes don't retract too far from the drums. Apparently mine wasn't working right or this would've caused the pads to drag--making all the long drives I've been going on quite difficult. Classic Performance Products is quite aware of this issue, and, in addition to selling complete kits as often as possible, highly recommends a dual-chamber Corvette-style master cylinder any time a disc brake conversion takes place. Converting to power brakes by backing your new master cylinder with a vacuum-powered booster is also highly recommended. For this truck, we chose an 8-inch dual-diaphragm booster.

For those wondering what exactly a booster does, it's like this: The front and rear half of the body is divided by a diaphragm. When the engine is running, the vacuum creates equal pressure on each side of the diaphragm. When pressure is applied to the pedal, it closes a poppet valve and the vacuum draws the diaphragm forward creating about 1,100 pounds of line pressure with minimal pressure applied at the pedal. Since the booster runs on vacuum, it is essential that you check that your engine will provide the required 16-23 in-lb to run the booster properly. A gauge can be had for around 10 bucks at any parts store or CPP. Besides the obvious advantage of running the 1 1/8-inch bore Corvette-style two-circuit/split-chamber master cylinder (that being if there is a malfunction somewhere in the system, you will still have either the front or rear brakes to stop which was made mandatory by the Federal government in 1967), we also needed a larger-capacity fluid reservoir.

With the large 2 15/16-inch caliper pistons, the small drum-style master would be empty before the brake pads were completely worn. This is also where the wide-body Vette master comes in handy. CPP includes a new proportioning valve with their complete kits, and it's preset for each application. A conversion line kit is also available to split your existing brake lines into two circuits with minimal modification. Remember, all of CPP's brake components can be purchased individually or as a complete kit, and any or all of the components can be upgraded to polished, chromed, or powdercoated, depending on the part. Alan and I (mostly Alan) handled the install in just a few hours, and I was amazed at how such an easy install could have such a dramatic effect on everyday driving, thanks to a pedal that I no longer have to stand on to stop!



Lately, I've been adding some polish and shine to Old School, so

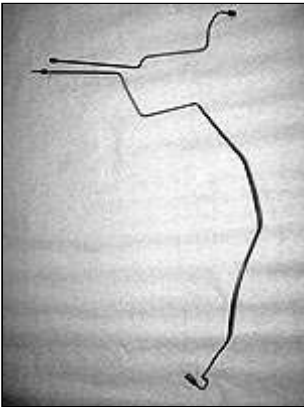


This billet cap is another option offered by CPP. The flat spot in the center can be tapped with fittings if your master cylinder is under the cab and you want to run a remote reservoir.



The proportioning valve has a pressure differential switch incorporated into it. When hooked up, it will trigger a warning light if it senses any imbalance (like a leaky hose or low fluid) in the system, which is handy if your master is under the floor. Since many people never hook it up, though,

when I ordered the booster and master kit from CPP, I went for the whole enchilada: polished stainless 8-inch dual booster and chromed Corvette-style master--fully assembled with chrome or polished hardware.



The conversion line kit makes it worlds easier to adapt your system to the new two-circuit master cylinder. They still may require some bending, depending on the prop valve you're using and such



We soaked most of the brake fluid out of the reservoir with a rag, and then detached the old brake line with a line wrench.

CPP makes a trick little cover for it.



The line was pulled out of the Tee down on the frame, too.



Alan removed the stock master from the firewall by pulling the two bolts.



The pushrod was then unbolted from the pedal arm.



Now the stock master can be removed and trashed.



Using the mounting brackets as templates, the two extra holes used to mount the booster were drilled out. We were careful to check for wiring harnesses and such beforehand.



These mounting brackets tilt the booster slightly, which changes the pedal ratio in order to get a full stroke out of the master cylinder.



The booster/master assembly was set onto the mounting brackets...



...and mounted up solid using stainless fasteners.



Looking good! Now it's time to do all the connecting so it works!



As per the directions, Alan drilled a new hole in the pedal arm 1 inch lower than the original. The reason for this is that it makes the pedal less "touchy."



The pushrod was then bolted up through the new hole.

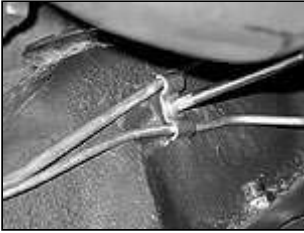


Before Alan ran the new lines, I cleaned up the old line and surrounding area and repainted the crossmember.



These are the passenger-side lines

after separating the front and rear circuits.



Alan drilled and tapped for a couple Kugel clamps to secure the two lines as they run along the crossmember.



Not bad, eh? I was glad I did the extra cleanup work once I saw the results.



We removed the previously plugged 1/8-inch vacuum fitting from the intake manifold and replaced it with the new 3/8-inch unit.



We then ran the vacuum line over to the fitting on the booster.



Now Alan connected the lines at the prop valve and made a few more minor bends.



Here's a cool trick. Alan smashed one Kugel clamp and used it against a standard clamp, making for a cool little separator for the two brake lines.



CPP even carries top-of-the-line brake fluid, which we then used to fill the master cylinder reservoir.



Alan broke his own cardinal rule and installed the master cylinder without bench bleeding it first. We leveled it out using the airbags on the truck (Jim's idea), and Alan removed the lines and pumped out any air bubbles that were in the system.



We then proceeded to bleed the brakes, starting at the right rear corner and working to the front left.



Now we fired up the truck and checked for any leaks before heading out for a few brake checks.



This photo is kind of unremarkable, but that's because when I hit the brakes, the truck stopped straight, smoothly, and steadily. And the pedal pressure needed to apply the brakes is now a fraction of what it once was. With overdrive, power steering, and now power brakes, Old School is truly becoming quite nice to drive. At least it still looks mean!



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