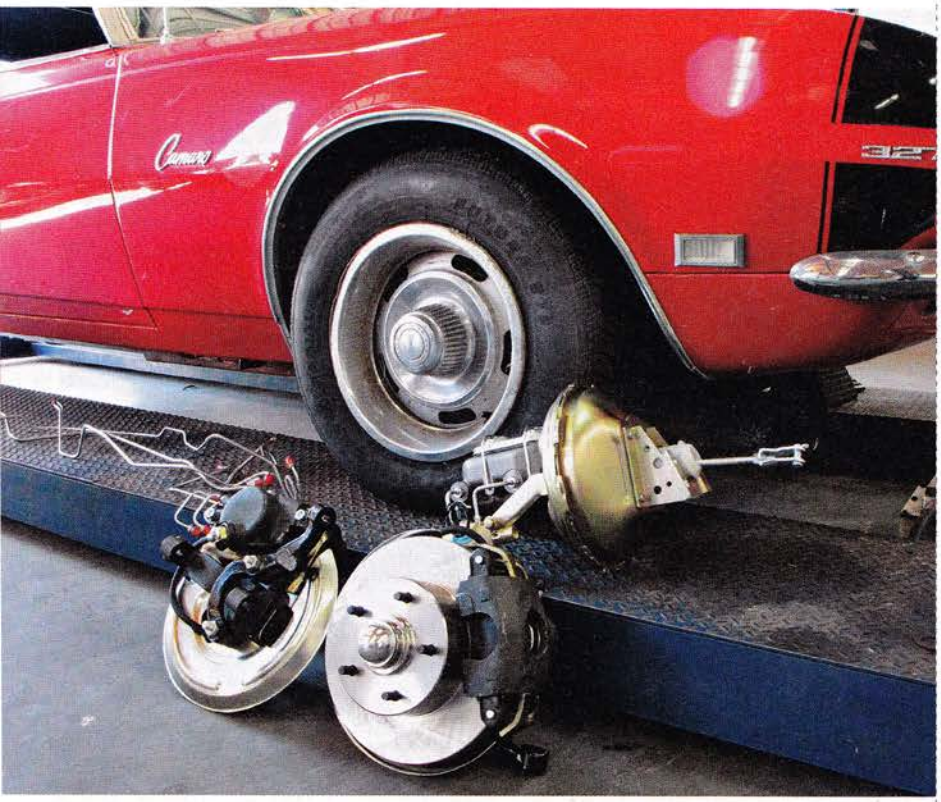
EASY DRUM TO DISC CONVERSION

CPP HAS EVERYTHING YOU NEED TO EASILY CONVERT JUST ABOUT ANY CHEVY FROM MANUAL DRUM TO POWER DISC BRAKES.



Drum brakes were a design that started way back when automobiles were just coming around. Times have changed, but drums are still a cheap, lightweight option, so they can still be found on the back of brand new vehicles. Back in the day, drums worked just fine when life was a bit slower and everyone else was stopping on drums. Somewhere in the mid-'60s, the car manufacturers figured out the disc brake design was far superior and by the '70s pretty much all cars were fitted with disc brakes up front. Then brakes started to get smarter with the advent of anti-lock technology. Now the roads are littered with all kinds of cars that can stop way better than any drum brake-equipped muscle car.

A set of drum brakes in good working order will stop a car, but in a longer distance than disc brakes, plus they are temperamental, susceptible to pulling and fade (especially when wet), and high maintenance compared to discs. Drums require periotic adjustment, and have a lot more moving parts to fail as well. Discs are much simpler, way easier to maintain and typically need no attention until it's time to change the pads. On top of all this, disc brakes will stop better than drums on the first stop till the last because by design they dissipate heat better.

So, unless you are performing a numbers-matching stock restoration-type build there is no real reason except budgetary concerns for not swapping to discs. If your budget is super tight, then maybe discs are out of your reach, but let us put it in perspective for you. Unless all your drum stuff is in good shape you are going to need to rebuild them that could cost you up to $300 to do it right. That coin could be applied to a conversion instead. We found a complete front disc conversion and everything else we needed from Classic Performance Products (CPP) that set us back $959. It's built with all new components and includes everything from the spindles and bearings, all the way to the rubber lines. If you factor in what the drum rebuild would cost anyway, it starts to make a lot more sense to convert. The car will be safer, easier to maintain, and stop a lot better—possibly saving your front clip from parking itself into the back of the vehicle in front of you. This is a big consideration, especially in these days of distracted driving and 80 mph (and up) highway speeds.

We went over to D&P Classic Chevy in Huntington Beach, California, to follow along as the shop converted a manual four-wheel-drum '68 Camaro to power front disc brakes. The job was done in one day with no exotic tools and other than bleeding, the system was installed by one person.

1
Here are the main components to the swap we got from Classic Performance Parts (CPP). They are the company's standard disc set up based off '69-'72 Chevelle components. It includes single piston calipers with 2 15/16-inch stainless pucks (powdercoating available), 11-inch rotors (drilled and slotted options offered) all assembled onto the company's new stock height spindle. One thing to note is these spindles came assembled with new steering arms attached. We could have reused our stock steering arms but the 7/16 mounting holes would need to be opened up to 1/2-inch, which is not easily done on the hardened material. Everything included with the set up is new, right down to the wheel bearings. Since the units come preassembled, if there happened to be a fitment issue or something like that it would have been found at CPP and remedied before being sent to us.

2
The other big component in the swap is the booster and master combo. We opted for the factory 11-inch size, but CPP has them in 7-, 8-, and 9-inch diameters in single or dual diaphragm configurations if you are running a big-block with tall valve covers where the 11-inch won't clear. The master is designed after the '67-'76 Corvette unit, and the proportioning valve is actually an AC Delco part.

3
The last piece of the puzzle is a few new brake lines to connect the components. CPP has pre-made lines (OEM steel or stainless) as well, and offers a complete OEM steel line kit for $79.00. We didn't end up using all of them at this point, but since the kit was so cheap we stashed the unused stuff for later installation if we need it. The lines are made from mild steel and feature machine flared ends, all the correct bends and even the proper gravel guards.

4
Before getting too far ahead of ourselves, we wanted to make sure the brakes would clear our 14-inch Rally rims. We dropped the new disc assembly inside the wheel and made sure it would spin without hitting anything. Our clearances were tight but we were good to go. Make sure you check yours because some of these Rally rims will only fit drum assemblies.

5
Since our new assemblies are ready to go, we just needed to take off the drum assembly, spindle and all. Matt Shedarowich uncoupled the brake lines at the frame junction.

6
Next, Matt moved to breaking the ball joints and tie rods free. With the lower control arm supported by a jack (pneumatic style that is on the lift) he removed all the cotter pins, and just loosened all the castle nuts. The tie rods and ball joints feature an interference fit, so loosening the nut a little bit and whacking it with a hammer is usually all it takes to free the parts.

7
If this procedure doesn't work for you, then you will need to pick up or borrow a pickle fork to separate the components. Before trying to remove the ball joints, make sure to have a jack placed under the lower control arm. The springs are under a considerable amount of pressure and can fly out when you pop the ball joint. Again, a few good hammer blows to the side of the spindle should send a healthy shock wave through the part to free the ball joint.

8
Since our new assembly is ready to go, it was just a matter of dropping the unit onto the ball joints. CPP's spindle is made to be a factory fit so the ball joints and steering arms have the proper sized holes and locations. This conversion will move the wheels out 7/16 of an inch per side, the same as if you got factory stuff from the junkyard. It's not much, but keep that in mind if your wheel offset is super close to the fender.

9
For timing purposes, we just installed the spindle/disc assembly, but after the shoot Matt came back and installed new ball joints since these are still the ones installed at the factory back in 1968.

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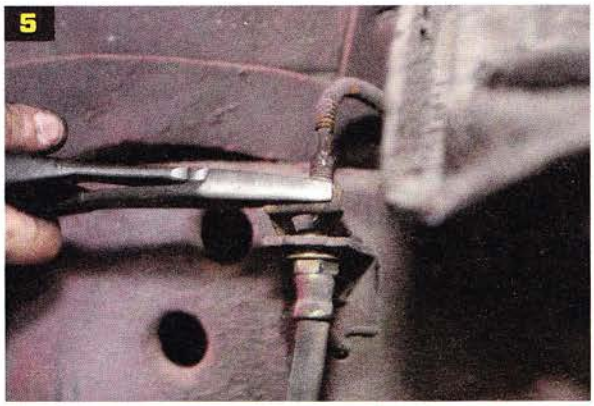
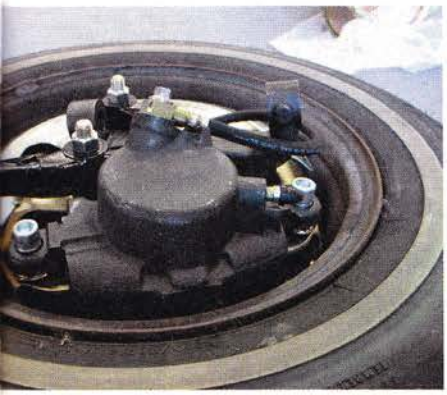
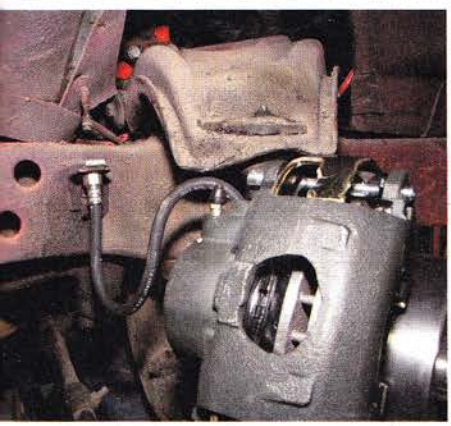
The CPP assembly even comes with the appropriate rubber brake line already installed at the caliper, so it was just a matter of slipping the other end in the bracket and installing the new clip.







11
After all these procedures were done on the driver's side, Matt moved onto swapping out the hard brake lines. The lines that run from the master down to the front brakes are what we are going to replace since they need to be a bit bigger to feed the discs, and also because we are converting to power the ends will fall in a different location.

12
The line that runs across the cross-member is removed by sliding it towards the driver's side as much as possible, which will allow the passenger's side to drop out.

13
The new line installs in reverse order. Just know the area around the steering box is pretty tight so it may take a little patience to get it in all the way. The line from CPP has all the right little bends where they are needed, so once we had it positioned correctly it fit like a glove.

14
We used the factory brake line holding tabs from the OE line. They are just bent around the line, so you just need to open them up a bit to get them off.

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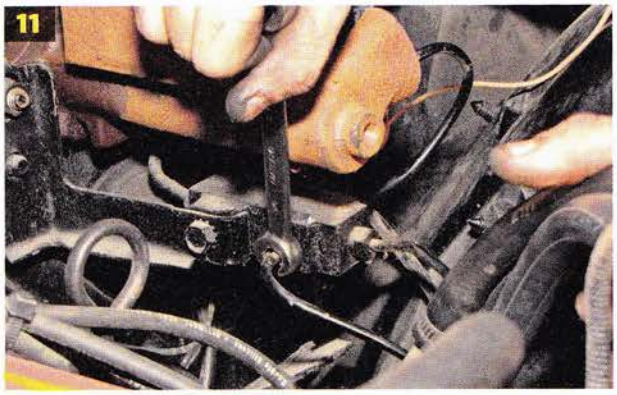
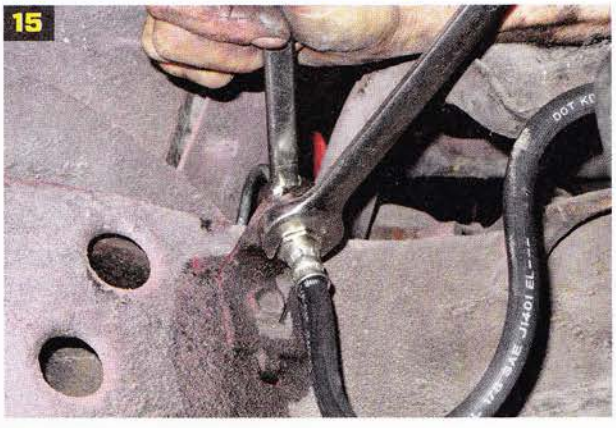
The end that feeds the caliper fell right above the rubber line, so it was just a simple matter of threading it in and tightening it up. With any new brake line make sure to tighten the brake line and then loosen and retighten it a few times to get the line and fitting lapped together. This should prevent any leaks or seepage.

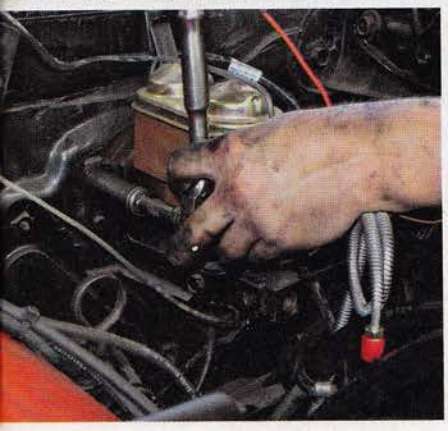
16
The driver's side piece is much shorter, but still proved to be a bit of a pain to get all the way in. We eventually had to straighten out one of the bends a little to get it past the steering box before putting the bend back to where it belonged. We would also recommend when doing this keep the plastic covers on the ends of the line to prevent dirt and grime from getting inside.

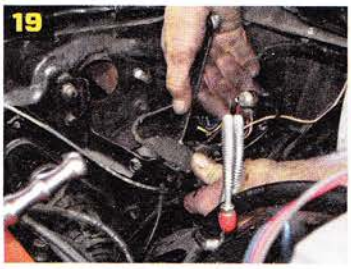
17
With the lines in place our attention was turned to the master cylinder. Step one was to crawl under the dash and unhook the pin connecting the pushrod to the brake pedal (arrow). It's held in place by a small clip that we used a small flat tip to remove. In this shot you can also see the brake light switch. If you are going to take your time doing this swap, we would recommend disconnecting the battery because once you pull the master/booster the taillights will probably come on and stay on till you get the new stuff in.

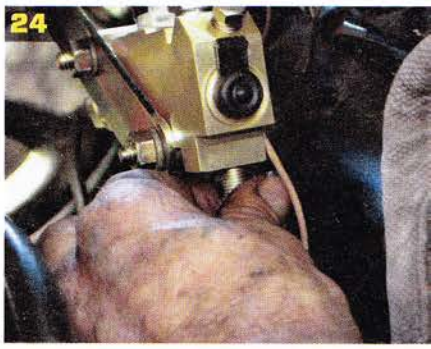
18
The master is hanging off a set of studs on the firewall. There are four studs, but non-power only uses two. Make sure to remove all four, so the new booster will install properly.











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The drum brake distribution block also needs to go, but make sure to loosen the brake lines while it's still attached to the firewall. It will make things easier.

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The CPP booster/master set up is preassembled as well, and is even plumbed with new brake lines and a proportioning/distribution block. The unit is ready to go, but we would recommend removing the brake pedal pin before installing so you are not fighting it. CPP also provides new nuts to hold the booster on the firewall. They include a fine and coarse thread set of nuts to cover all applications. We needed the coarse thread nuts for this '68.

21
After the booster was mounted the pushrod was hooked up to the brake pedal. There are two holes drilled in the pedal. The upper one is for non-power, while the lower is used for the power stuff like we are installing.

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The brake line that runs to the rear brakes will be retained, but will need to be bent around to meet the new port location (arrow).

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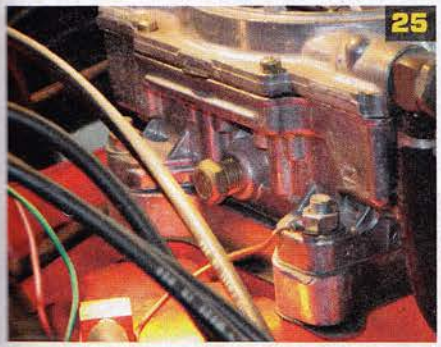
The rear brake line is also the incorrect size for the port, so we grabbed this adapter from CPP to



convert the 3/8-inch port to a 1/4-inch port. CPP has a full selection of these plumbing adapters and fittings.

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The front lines we just installed fell right where they needed to be and thread in with no drama.

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Now we need to provide the booster a vacuum source. This car has an Edelbrock carb with this large port we can use. The CPP line kit comes with a 90-degree fitting for the manifold, but would not work in our scenario. Luckily, D&P had a straight barbed nipple on hand.

26
Our hose kit came with plenty of hose so we hooked one end to the carb and routed it under the accelerator rod and up to the booster before trimming.

27
With all the components installed, it was time to put some fluid in the system and bleed out the air. Since the master is completely dry, Craig Peterson decided it was best to bench-bleed the master first, so it was removed and bleed accordingly.

28
After the master was free from air bubbles, it was reinstalled so the rest of the system could be handled. Craig started a the passenger rear tire first, then moved to the driver's side rear—basically starting at the furthest point from the master and working closer.

29
Craig moved up front to the passenger side, and then over to the driver's side to complete the bleeding process. Not shown in the picture was Matt sitting in the car pumping the break pedal for Craig.

30
With the air out, it was time to chuck the wheels on and find out if the new parts worked, and more importantly, how well. Out on the quiet street in front of D&P, Craig went to "bed" the brakes to improve performance and increase resistance to heat cracking and warping. Bedding the pads is a necessary step in any brake install, as leaves behind a very fine, even layer of pad material on the rotors. Bedding, in a nutshell is performing 10 or so light stops from 35 mph down to 1 mph, then stepping up the speed to 50 and repeating the process. When doing this, Craig avoided sitting still with his foot on the pedal; he even kicked it into park sitting at a light. This will keep the pads from creating a localized hot spot on the rotor, which creates a high area resulting in a vibration or a pulsating pedal.

31
In our simple test, we set up a large cone at the beginning of the driveway, and had Darryl Nance owner of D&P stop the car as safely as possible from 35 mph. With the four-wheel drums, the car was a handful, but it did stop about four car lengths past the cone.

32
After the swap and bedding procedure, the car stopped about one car length past our cone and it did it in a nice, controllable, straight line. The '68 is much safer to drive around in a sea of antilock-equipped econo boxes and the cost of the conversion is way cheaper than replacing the front clip after a crash. Also, moving forward the discs will be easier to maintain, and since all the components are of OE design, pads and repair parts can be purchased at any local parts store.

PART NUMBERS AND PRICES	
6769CBK-S11-2	Complete disc brake kit with stock 11-inch booster $799.00
6774SP-A	Stock spindle steer arm set $69.00
VHK1-25	Vacuum hose kit 90-degree fitting and 25 inches of hose $12.00
6769LK-OM	Front &r ear disc brake conversion line kit, OEM steel $79.00

SOURCES

Classic Performance Products
800/830-0952
www.classicperform.com