

The hunt for replacement disc rotors for the 69-70 Impala.

A few years back, upon starting my chassis restoration, I had decided that my 69' would need disc brakes in place of drums on the front. A little more performance would demand that braking be increased as well. Remembering my younger days, and some of the "near misses" I had as a result of brake fade, made this conversion a no brainer.

It was what seemed pretty straightforward, and many had done it. Purchasing a 1970 Impala setup off ebay was my starting point. Unfortunately the rotors that came with it were too far gone to salvage. So I figured I'd just pop down to my local parts store and pick up a set... Wrong.

Turns out the rotors were now obsolete! Perhaps due to the fact that this rotor design was used for only two years, and, only on the B Body Chevrolets and Canadian Pontiacs, and standard only in 1970. My parts guy attempted to go nationwide to find some, and thought he had hooked onto the last few new "integral hub" that were made available just a few years prior. Alas, they were gone, and any else had seemed to have dried up. Classic Industries actually was advertising them at the time, but they had none in stock, and nothing in the pipe. It's now said the stock discs are now available as of Jan 2008.

One would, from time to time see a NOS pair on ebay, and as expected, bidding would be frantic, with the price going as high as \$500. Good used ones were very seldom seen, as people likely were hanging on to what they had. I could have bid crazy money, but I started probing around a little in the hope an alternate could be used.

Some mention of a Vette rotor being used was out on the web, but with little detail to date. Poking around, I soon discovered that 1965-82 (C3) Vette rotors had the same 5" x 4-3/4" bolt pattern as the big Chev and shared the same diameter (11.75") and thickness (1.25"). The offset looked obviously different, and the hat was taller, but then it dawned on me, *what about mounting it OVER the Impala hub*, instead of behind!

My parts guy had a pair of rear rotors for a 73 Vette. I knew 65-82 were the same, but what about front to rear? Identical! Except for two access holes in the rears, to provide parking brake adjustment on the Corvette. One could use the rears on the front, no issues. So I took one home to try it out on a spindle I had in a mock up stand.

Low and behold, it fit!

The original eBay Rotor and hub:



Stock vs Vette:



Drum hub on spindle:



Here's what I found. First off, what I discovered right away, was that putting the Vette rotor over the stock hub showed a slightly loose fit. The ID of the Vette rotor hat flange is slightly larger than the hub to wheel/rotor mating surface. Perhaps the Vette rotor on a Vette hub shows the same clearance anyway. The same loose fit is evidenced with the drum hub described below as well. But the hub flange did fit perfectly flat in the Vette rotor.

Some numbers:

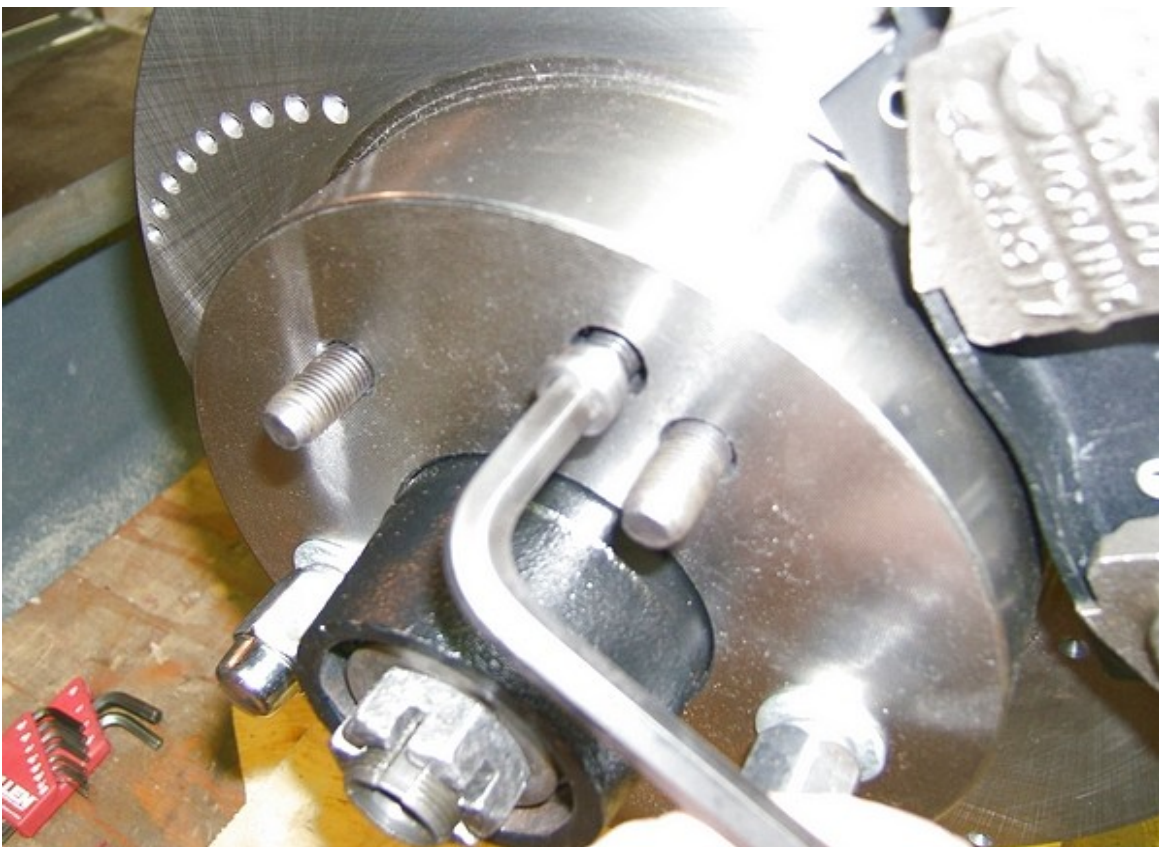
Vette rotor flange opening ID	= 2.820"
Impala hub OD mating surface	= 2.780", a difference of .040"
The Vette rotor hat face	= .291" (9/32) thick

Vette rotor fits over hub no clearance issues here:



My original thinking was that since the rotor was not centering on the hub, and bears all it's force strictly on the wheel studs, that more had to be done to bolster it. What I did was to open up those rotor "adjustment holes" to accept some cut down allen bolts, and drilled and tapped the hub to take the bolts. The rotor would now bear on the allen heads. My thinking now is that this was overkill, and people run these discs with no issues so far.

Allen bolt into opened up "access hole" - rear C3 rotor:



The second major thing I've discovered is that the drum brake hub will work on our spindle! Big deal you say... well as it turns out, it brings the increase in track back in 1/8" compared to our "disc" hub. Putting the Vette rotor over the disc hub naturally increases the track by the thickness of the rotors flange... to the tune of better than 1/4". The drum hub reduces the increase to 1/4" or so overall. You'd see 1/2" with the disc hub.

The trick is the 69' drum hub rotor mounting flange is about 1/8" more inboard. It is identical, save for the lack of a machined relief in the back where the stock disc would have mounted, uses the same bearings and seal. Yes, the drum or rotor mounting flange has a thinner cross section, but lacking the machined relief in the back actually brings the gusseting further out onto the flange. It should be equally as strong. But use your own judgement here.

Disc hub on the left:



Some numbers:

Disc hub flange = .50" thick x 6.270" dia.

Flange face to outboard end = 1 3/4"

Drum hub flange = .425" thick x 6.335" dia.

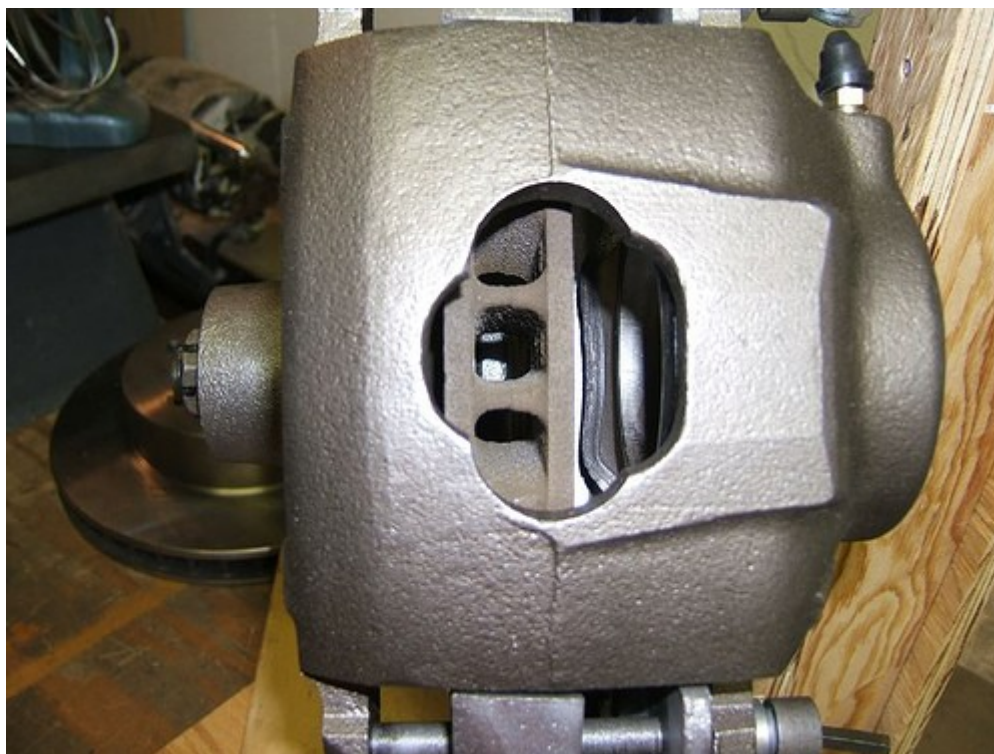
Flange face to outboard end = 1 7/8"

Perhaps 1/8 of an inch is no big deal, but at least it brings our wheel in a little closer to stock. It could reduce the chances of rubbing with those running extra wide front tires. Unless someone can tell me why I should not run the drum hub, this seems pretty logical to me. Keep your drum hubs people!

The Vette rotor centers pretty well in the caliper, pretty close to the stock position really, although the old rotor was pretty worn:



Stock rotor:



New wheel studs will be required with this conversion. 7/16-20 x 1 1/2. Ask for 69' Vette fronts. 1 3/4 long would be better, but I've not found any listed yet with the same knurl dimentions. If they were 1/2", the options would be greater. Imop, the ultimate would be to drill the rotor and drill and tap the hub for thread in 1/2-20 x 2" studs.

Here's a shot with the pads in the Calipers. I elected to go with some economy pads. Raybestos organics. They fit without a problem. One thing to note is that to center the caliper with pads in place, it will move inboard on the sliders about 1/8". This would not be required with the disc hubs. The disc hubs will center the rotor more or less in the caliper a little better. You choose... 1/4 less track increase or better centering. I don't think you'd run out of piston before you've worn the pads out regardless.



Looks good!



Here's a summary of the conversion:

- The 65-82 Corvette rotor (front or rear) will fit over the 1969-70 disc or drum hub without any modification.
- The 69 drum hub will keep your track width closer to stock. Uses the same bearings and seal as the disc hub.
- You'll find the Vette rotor a little "loose" on the hub. .040 clearance was noted. Perhaps Covette hubs are the same?
- New studs will be required with the disc or drum hub. Stock are stepped, and the knurl would come right through the hub.
- Use 69-80 single piston caliper pads.
- The options with the Vette rotor are greater, cheaper, and they are available at any parts store.
- 69-82 Corvette spindles are the same GM part # as the 69-70 Impala.
- 67-68 Impala disc and drum hubs and 65-68 Vette have a smaller diameter outer bearing and will not fit on the 69-70 spindle.
- Apparently, the 67-68 stock disc rotor has a different offset, as it was used with a 4 piston caliper. Is the hub id smaller as well?
- The complete 69-82 Vette brake setup will fit the 65-70 Impala. Vette Spindle, 4 piston caliper/carrier, splash shield, hub and rotor.
- I believe the 65-82 Vette has an similar, if not identical steering knuckle as the 69-70 Impala.
- *In theory*, one could bolt on a performance Vette 4 piston setup 69 and up, if you had a 69-70 disc spindle already in place.
- One could consider purchasing an entire 69 and up Corvette setup. It's bolts up the same as the 69-70 Impala, but caliper to wheel clearance is to be considered and discussed with those who have done it.

Here's some part numbers and the years they cover:

Wheel Studs

Papco. 7/16 - 20 x 1 1/2. #560-114. Or ask for 69' Corvette fronts. They pressed into the Impala hub no trouble.

Corvette Rotors, 65-82

Raybestos, Front Pt # 5500, Rear 5501. Tons more brands and options available here. And far cheaper than the "original" offshore rotor.

Calipers, 69-70

Raybestos, Right Pt# FRC4052, Left FRC4051. More options available, but only 69-70 will fit on our disc spindle setup.

Caliper bolts, 68-76

Raybestos, Pt# H5004. Replace if showing any corrosion.

Anti-rattle clips, 68-80

Raybestos, Pt# H5408. Fits over the inboard pad and clips into the piston hollow.

Pads, 69-80

Just ask for 69-70 Impala, Many choices. Apparently its virtually the same single piston pad all the way to 80.

Cheers. Mark