

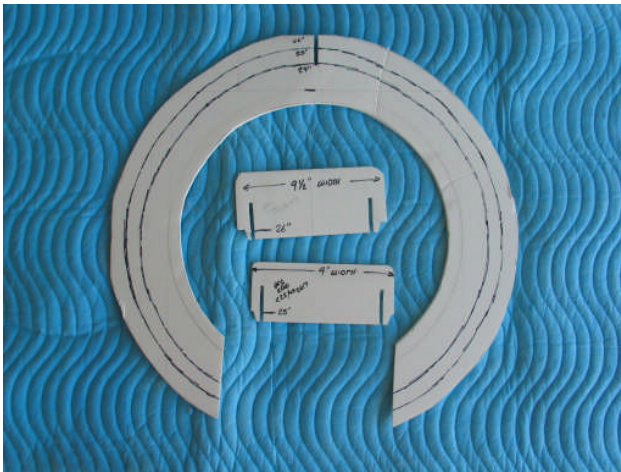
Tire Sizing for Dummies

Probably one of the most frustrating tasks for a new car is sizing tires correctly for it. If you're lucky and you can find another owner with the same manufacturer, suspension and most importantly, wheels then it's relatively simple - check his for fit and functionality and go from there. If you're like me then you have a bigger problem. First there aren't that many Contemporary/Upstate/Lesher Daytona Coupes in existence (less than a dozen and half of those aren't even in the US!) and second, I'm severely limited in my selection of wheels since I have "6-pin" knock off mounting. This limits size and offset AND style availability.

With my limited wheel availability I started there. I wanted to keep the general look of the originals so the style answer was to go with Halibrand look wheels. I'm running large Wilwood SL-4 calipers on the front with 12" rotors so 15" rims probably won't work without downgrading the calipers to regular Supralites - which are still good brakes - but I really wanted the increased braking performance. In 6-pin configurations there are only a couple of options and it jumps to 17" diameter wheels once the 15" are discarded. After seeing Vintage Wheels display at Knott's last year, and talking with Bob Lacy the owner, I was sold on a set of 17" wheels. Determining offset was fairly simple by measuring the distance between the mounting surface and the fender lip and figuring out where the wheel would sit - there's lot's of information on the web, including Vintages web site www.vintagewheelsus.com to help with this so let's get into the actual tire sizing.

Most manufacturers will give you recommended sizes and wheels but with the amount of customizing we do on our cars with tweaks to suspension, body and wheels it's easy to run into problems. Rear tires are fairly straightforward since they don't require clearance for making turns. Front tire selection requires that you check for those clearances, not just in a straight line but also full left and right when turning. Clearance must be checked on the inner fender wells, frame, suspension and the inner lip of the fender, otherwise you will be ripping tires and more during cornering. If you're on good terms with your friendly tire distributor you can try a couple of different tires on your car with the application of a couple of cases of beer and a promise not to run on them. For most of us though it's either pick a size and pray or buy one of those \$150 tire sizers that lets you dial in the tire size and check it. My way does the exact same thing for about \$10. Yup, you guessed it. Make a tire out of trusty foam core.

First thing is to cut a donut out of foam core with a 17" inner diameter and a 26" outer - 26 being the largest I thought possible to fit. You're going to have to cut a slot in the donut in order to slide it onto the rim and seat it on the bead.



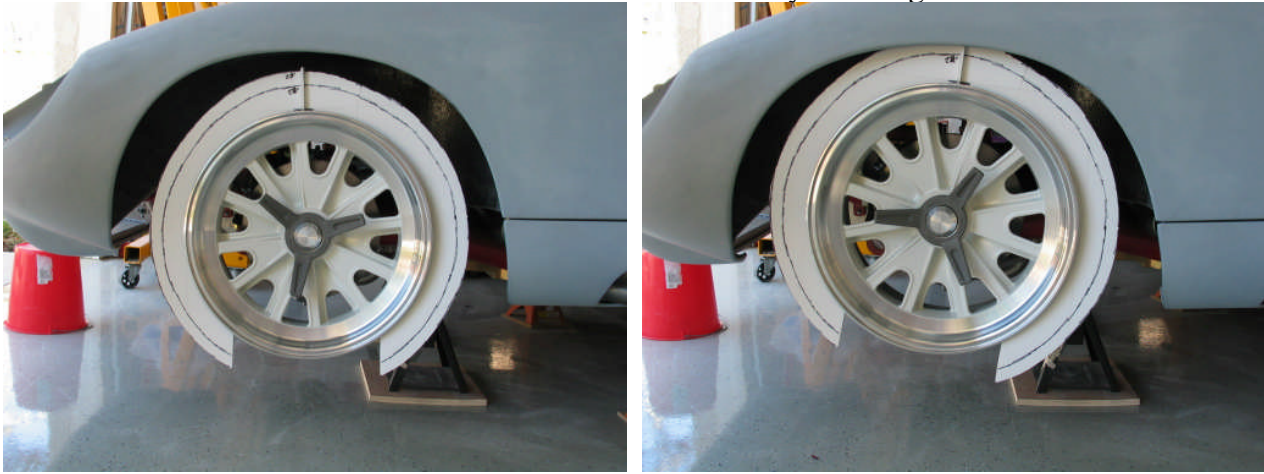
Then using the manufacturer's tire data I created a couple of "cross sectional pieces that can be fit into the slot at the top of the donut thus giving me the "true" tire profile mounted to the rim. Tire

data will usually give you the actual diameter, recommended rim widths and an inflated cross section measurement based on a specific rim width. I actually made two profiles as shown below to give me a 26" and 25" option.

| G-Force KDW | Rim Width | Section Width | Overall Diameter | Max Load |
|-------------|-----------|---------------|------------------|-----------|
| 225/45ZR17 | 7 – 8.5 | 8.9 on 7.5 | 25 | 1323 @ 44 |
| 245/45ZR17 | 7.5 – 9 | 9.6 on 8 | 25.7 | 1521 @ 44 |

Courtesy of BF Goodrich Tires

The other thing to take into account is wheel position relative to suspension travel. When your car is up on jacks the suspension is in the dropped position which will benefit large tires – gives you more clearance. To get true placement in the well you need to raise the suspension to “ride height,” which for me was to disconnect the coil-over and re-install my ride height brackets.



By installing the 245/45ZR17 profile I quickly learned that a 26" (ok 25.7") tire with a cross section of 9.6 inches would rub the inner fender wells badly at about one turn of the steering wheel. Not good. The tire size looked good straight on as it nicely filled up the wheel well but it failed the critical turning test. At speed this would have caused some serious interference and probably even damage to the tire and inner fender well.

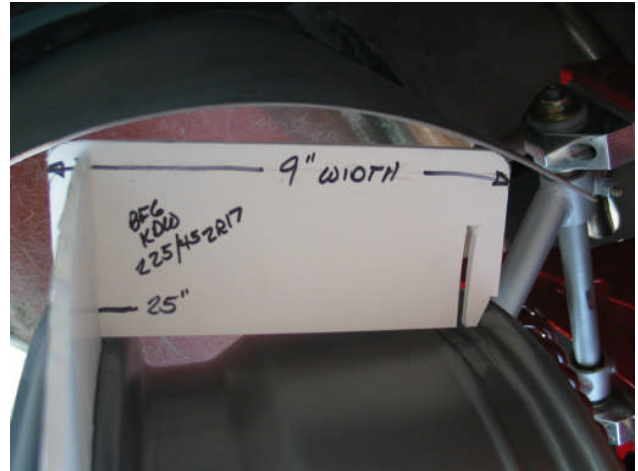


I then cut the donut down to a 25" outer diameter and installed the 225/45ZR17 profile. Why I picked a 225/45 profile versus a more standard 235/45 is that the section width is half an inch less and I really needed that half an inch. Repeating the turning tests and looking at the clearance I found this

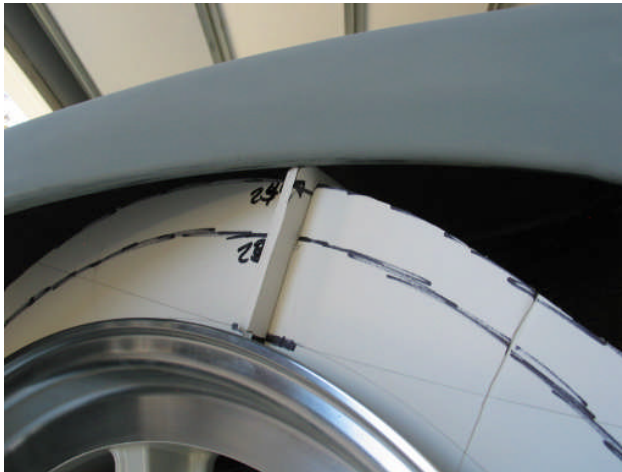
profile to be marginally “passing.” Its close, but only when the steering is fully over, which I expect to be a rare occurrence.



Front Clearance



Rear Clearance



The end product, while not filling the front wheel well as much as I'd like, will function under the driving conditions I expect to run the car at. On a 17" rim the tire/wheel combination looks “low profile” which is not the look I wanted but my only other option would have been to downsize the front wheel to a 16" diameter to gain back my aspect ratio and leave the rears as 17" but as previously discussed – no such thing as a 6-pin wheel in 16" today. This is exactly how Corvettes and other performance cars make their tire/wheel combinations look good.

