

## OBX LSD Washer Replacement by Rich Bryant (Dodge Neon unit)

[http://rbryant.freeshell.org/obx\\_washers.htm](http://rbryant.freeshell.org/obx_washers.htm)

As we all know the belleville washers in the OBX diff seem to be cheap and prone to cracking. They won't stop the diff from working if they crack but they will stop it from working when one tire is completely spinning freely. this happens when one tire is off the ground or has extremely poor traction like on ice. It also means that one tire CAN spin without the other catching in some cases.

These differentials are a torque biasing differential. If one tire has zero traction the other wont spin because zero times the torque bias is still zero. Granted this shouldn't be a common occurance but the washers are there to give you a phantom grip type effect in those cases and still allow some torque to be transferred to the non slipping wheel.

I have recieved a box of replacement belleville washers for OBX differentials.:

Here is a comparison picture between the original ones (black) and the new ones (more silver) The bottom row has them stacked to show that they align perfectly.



**Here is a step by step process for replacing OBX belleville washers:**

Here is a picture of the inside of the OBX with the upper worm gear, inner gears, and washers disassembled:



Step 1: Place the thinner of the two gears inside the center retainer.



Step 2: Place the stacked washers inside of the gear. They should be stacked like this )()(





Step 3: Place the thick gear over the washers (it will stick up past the top of the inner retainer if assembled properly to provide preload)



If you are talented you can put them all in at once. They will fit inside of the gears like this (notice the preload is there because the two gears are held apart by the belleville springs):



Step 4: Put the center worm gear back in.



Step 5: Put the top back on the diff

Note the dowel pin...



It aligns with this notch..



Step 6: Put the bolts in and torque them down to 20 ft\*lbs. **(Marcucci: should be 30-35 on the H22 based on bolt size)** I suggest putting the diff in a vice. The passenger side has a flat spot in it that can be used to hold it in place.

Some people have experience axle fitment problems after pressing on the differential bearings. This occurs because the differential housing is made of a softer metal than the stock diff. After the bearings are pressed on the holes are distorted. This can be solved by using a brake cylinder hone to enlarge the hole slightly if the axles are too sung. I also found that if you try different clocking of the axle some fit looser than others. This should be fixed and remedied after the bearings are pressed on but before installing the diff into the tranny. I simply found a place where it fit loosely and installed the axle that way.

People also sometimes have a poorly tapped hole. I didn't but if you do just run a tap through it (or run it through all of them if you prefer).

BTW: If you tear it down and wonder how it works I think this article By Dave Coleman of Sport Compact Car does the best job that I have seen of describing it: [http://www.sportcompactcarweb.com/pr...us\\_zx3\\_part\\_4/](http://www.sportcompactcarweb.com/pr...us_zx3_part_4/)

Let me know if you have questions or comments.

If you want/need a set of washers just send me a PM or email me @ rich\_bryant\_is@yahoo.com and I can hook you up!

-Rich