

A Garmin GPS Suction Cup Stand Converted to Magnetic, Version 1.1

By **R. G. Sparber**

Protected by Creative Commons.¹



My Garmin GPS is supported by this stand. The idea is that I flip the lever up, press the suction cup against a smooth clean surface, and push the lever down. This action pulls up on the suction cup and holds it in place.

Well, it works fine for a few hours but always cuts loose. I certainly do not need this kind of distraction while trying to deal with rush hour traffic.

In my case, my smooth clean surface is a disk that is glued down on my dashboard. The disk was supplied by Garmin.



The lever action on this stand reminded me of my magnetic base that supports my Dial Test Indicator. As the knob is turned, it turns on and off the magnet.

The raising and lowering of the center of the suction cut can be used to raise and lower a magnet. This won't turn the magnetic field off, but it will greatly reduce the force needed to lift off the stand.

¹ This work is licensed under the Creative Commons Attribution 4.0 International License. To view a copy of this license, visit <http://creativecommons.org/licenses/by/4.0/> or send a letter to Creative Commons, PO Box 1866, Mountain View, CA 94042, USA.



Here is the modified stand with its base. The base is a disk of steel that is glued to the plastic disk attached to my dashboard.



With the lever up, the stand is locked into the disk. This is because the magnet is almost touching the bottom of the hole in the steel disk.

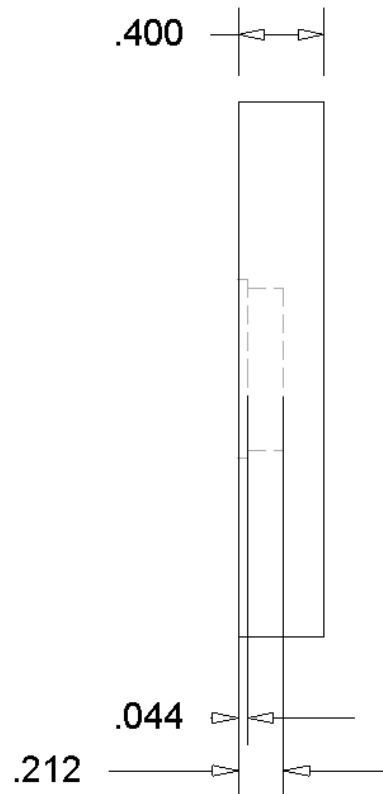
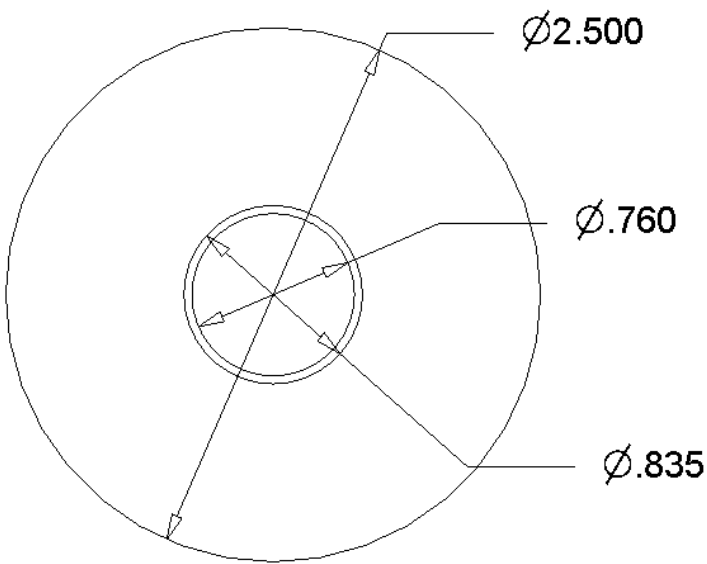


Push down on the lever and the stand easily lifts out because the magnet is pulled out of the hole in the steel disk.





Nothing special about the disk. It is cut from mild steel and counterbored on my lathe using a boring bar. I did break the edge with a file.





The modification to the stand begins by pulling off the suction cup. It is a form fit around the aluminum piston.

Next, raise the lever.

Then the steel pin is pushed out.



Out should drop this aluminum piston with its spring. Put the spring in a safe place.



Chuck the piston in the lathe. There is a round lip under the face that is sufficient to hold the part. Be sure the underside of the disk is in full contact with the jaws. When running, it should not wobble.



After using the spotting drill, drill in about 3/8" using a #36 drill.



Then tap 6-32 about 1/4" deep.



This is the only special part: a countersunk neodymium magnet from K & J Magnetics.

<https://www.kjmagnetics.com/proddetail.asp?prod=RC22CS-P>

The screw is a 6-32 flat head 1/4" long.



The magnet and screw neatly attached to the modified piston.



Reassemble using the spring and pin.



Snap the stand onto the GPS and we are done.

Acknowledgement

Thanks to Gerald Feldman for educating me on how a magnetic base works.

I welcome your comments and questions.

If you wish to be contacted each time I publish an article, email me with just "Article Alias" in the subject line.

Rick Sparber

Rgsparber.ha@gmail.com

Rick.Sparber.org

