



Self Centering Gauge



Chris (Aero)Engineering Design

[VIEW IN BROWSER](#)

updated 4. 9. 2024 | published 4. 9. 2024

Summary

Device to get a centered marking, regardless of the width of the thing you want a centered marking on.

[Hobby & Makers](#) > [Tools](#)

Tags: [tool](#) [self](#) [mark](#) [marker](#) [marking](#) [center](#) [guide](#)
[tools](#) [gauge](#) [ruler](#) [werkzeug](#) [useful](#) [centerfinder](#)
[useful3dprints](#) [markinggauge](#) [centering](#) [zentrier](#)
[centeringtool](#) [selfcentering](#) [gauges](#) [zentrierhilfe](#)
[mittenfinder](#) [zentrierer](#) [centeringgauge](#) [werkzeuge](#)
[centeringguide](#) [markingguide](#) [selfcenter](#) [mitte](#) [centerguide](#)

Details

This is a device to get a centered marking, regardless of the width of whatever you want to mark. It works by placing the stopper on either side of the beam, bar, etc. and twisting the device until both stoppers touch the sides. The geometry ensures that the marking hole is then centered between the stoppers. You can make the gap between the stoppers wider and smaller to accomodate a wider range of component widths. Make sure

to place both stoppers at the same distance from the middle, otherwise it will not give you a centered marking.

I made several version of the gauge with different sized holes in the middle. Choose the version which best fits your pencil/marker. A hole much too wide will allow for too much wobble when marking and the line will be off center by a few millimeter. A good choice for different sizes of pencils will be the “chamfered hole” version, where the hole is just 2mm for the lead, but it's chamfered to the top to fit the rest of the pencil. I also made a version thats just one print. Choose this if you don't want to deal with the additional bolts required for the regular version or when you prefer it beeing one piece instead of three.

The gauge can also be used to get a marking along the edge of something at a distance of 15-30mm (in 5mm steps) from the edge. For this, place both stoppers on the same side, place a pencil or something similar at the distance of your choosing and slide along the edge. The distance marking plates also provide a larger support surface for the gauge in general. The edges might also be useful occasionally when measuring angles, so I incorporated commonly used angles into the design of the edges.

Printing and assembly

I printed this model with a 30% cubic infill and 4 perimeters to ensure it doesn't deform while pressing it against a piece of wood or something.

If you want to adjust the size of the model, choose the “one print” version with no distance markings on it and add the hole in the diameter you want afterwards in the slicer (in Prusa Slicer you can use negative volumes to do that, there are tutorials for it on Prusas website).

An option to consider when printing this is also “Print external perimeter first”, as it is called in Prusa Slicer. This may also help with dimensional accuracy. But this also comes down to your personal printer and printing experiences, but it may be worth considering for a nice and accurate print.

When your prints tend to warp use a brim on all parts. Otherwise it should be fine to just use on with the stoppers, as their contact area with the bed is quite small.

Things you will need to print:

1 x Centering gauge

2 x Stoppers

or

1 x One-part centering gauge

Measure your pen or pencil if you want to use this for marking. Most likely the 7.5mm bore insert will be the best in this case. Make sure the pen is not loose, as this will make the marking unprecise.

Assembly

To assemble you will need two M5x25 allen bolts for the stoppers (and fitting nuts of course).

About the model

I made this version of my self-centering drill guide for people who just want to use this for getting nice centered marking. It's much thinner and requires consequently less filament to print. Also the main part consists just of one piece with a hole in it instead of a system to fit different inserts for various drills, as with the drill guide.

This remix is based on



Self Centering Drill Guide

by Chris (Aero)Engineering Design

Model files



Centering Gauge - standard version

11 files



centering-gauge_chamfered-hole.3mf



centering-gauge_no-hole.3mf

☐ Use this for scaling and add a fitting hole afterwards as a negative volume



centering-gauge-stopper.3mf

☐ You need this 2 times for every gauge (except for the one part prints)



centering-gauge_75mm-hole.3mf



centering-gauge_6mm-hole.3mf



centering-gauge_65mm-hole.3mf



centering-gauge_7mm-hole.3mf



centering-gauge_8mm-hole.3mf



centering-gauge_85mm-hole.3mf



centering-gauge_9mm-hole.3mf



centering-gauge_10mm-hole.3mf



Centering Gauge - one part print

10 files



centering-gauge_onepart_chamfered-hole.3mf

centering-gauge_onepart_no-hole.3mf

☐ Use this for scaling and add a fitting hole afterwards as a negative volume



centering-gauge_onepart_6mm-hole.3mf



centering-gauge_onepart_65mm-hole.3mf



centering-gauge_onepart_7mm-hole.3mf



centering-gauge_onepart_75mm-hole.3mf



centering-gauge_onepart_8mm-hole.3mf



centering-gauge_onepart_85mm-hole.3mf



centering-gauge_onepart_9mm-hole.3mf



centering-gauge_onepart_10mm-hole.3mf



centering-gauge_75mm-hole-one-part-version.3mf



centering-gauge_75mm-hole-standard-version.3mf

License ©

This work is licensed under a
[Creative Commons \(4.0 International License\)](#)



Attribution—Noncommercial—Share Alike

-
- ✗ | Sharing without ATTRIBUTION
 - ✓ | Remix Culture allowed
 - ✗ | Commercial Use
 - ✗ | Free Cultural Works
 - ✗ | Meets Open Definition