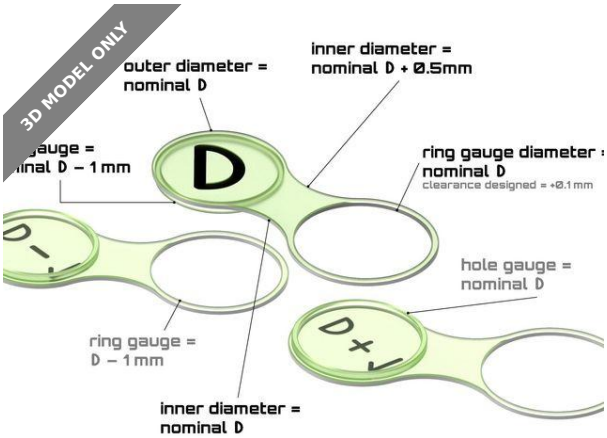


Fillet diameter radius gauge | Diameter chain

AMT

VIEW IN BROWSER

updated 1. 2. 2023 | published 1. 2. 2023

Summary

5 to 30mm inner & outer radius/diameter combined in one tool. Prints easy & fits in every nook and cranny.

Hobby & Makers > Tools

Tags: colorchange multicolor rounded chain measure keychain ruler corner modeling radius radiusgauge twocolor keychains fillet circular corners measurement measurementtool multicolor3dprint twocolorprint measurementdevice millimeters rulerincentimeters diameter roundededges centimeter filletgauge fillettool radiustool millimeter measurementgauge multicolorprint centimeters roundedcorners halfmillimeter diametermeasure rulerinmillimeters durchmesser manualmulticolor twocolorprinting radiusmesser multicolor3dprinting radiusfinder

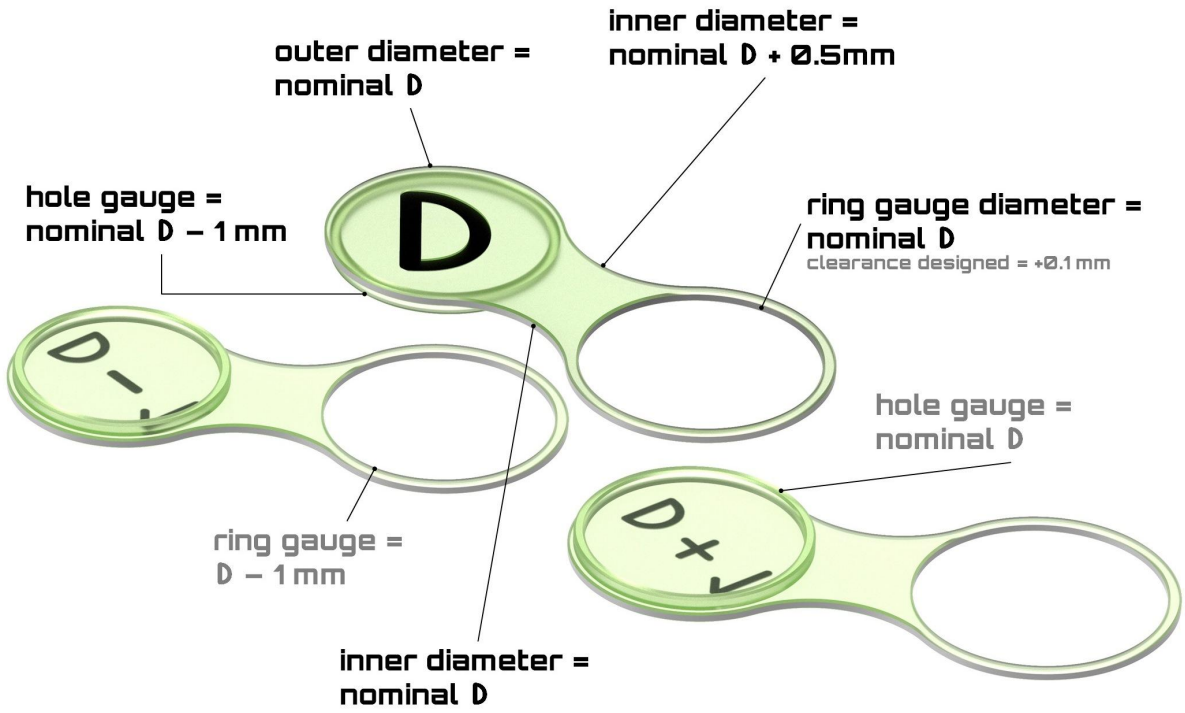
What it is

A set of linkable gauges that form a chain of diameters.

Inner & outer radii/diameter gauges, ranging from 5 to 30 mm (for now).

Usage

A flaw of highly integrated designs is their inability to fit in every nook and cranny. This design is down to the core but still packs some features.



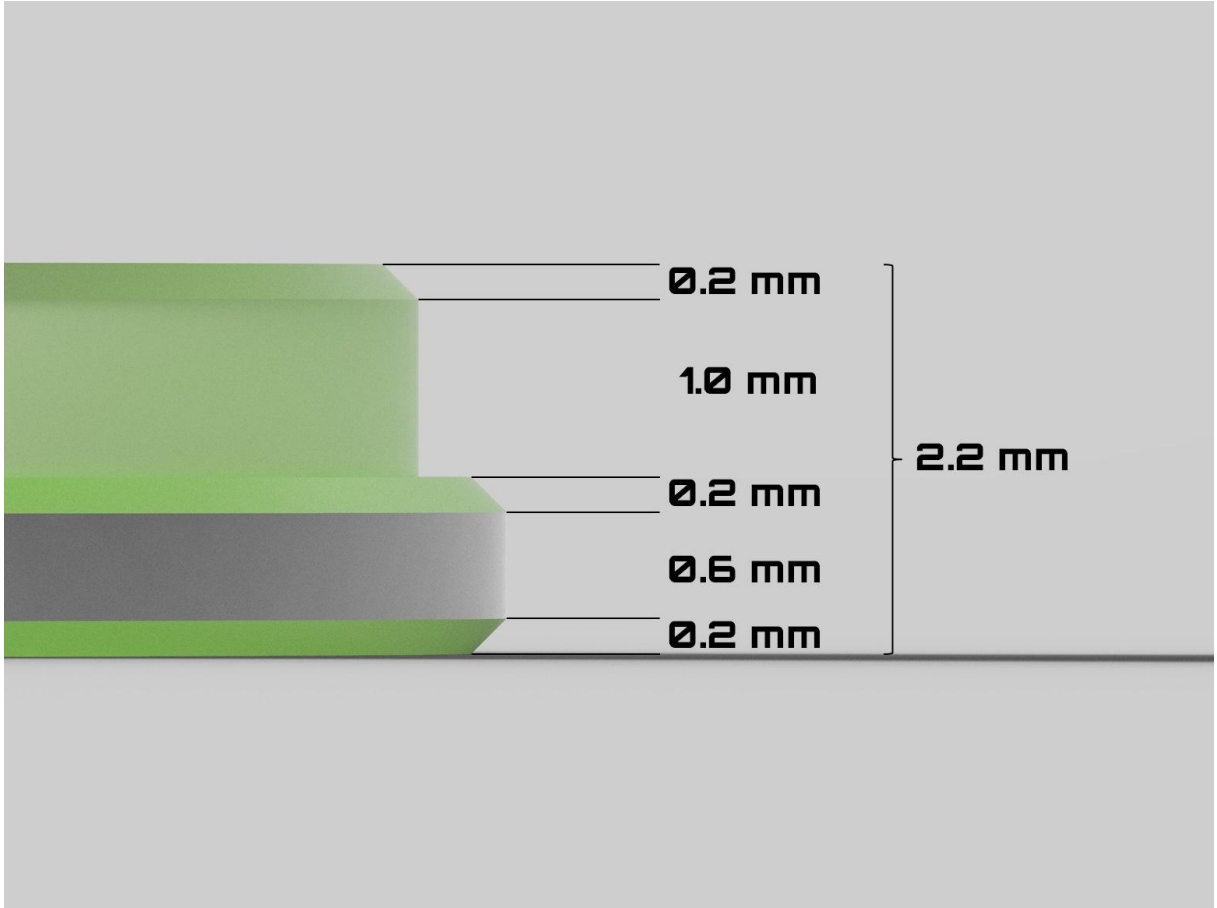
As last resort for outside corners, you could even snip of the thin sections, take the measurement and reprint the part or continue to use it this way. If you can't gauge a rounded corner with this tool, well ... you're out of luck, I guess.

How to print

There are two options awaiting you:

1. pre-arranged sets
    - efficient use of your built space
    - fixed intervals of available sizes
2. individual sizes
    - freedom of choice

The smaller the piece, the smaller the recommended nozzle size. My 0.6mm setup started to butcher at gauges sized smaller than 6mm. The layer height is partially recommended at 0.2 mm layer height.



A multi color version is just a matter of filament changes between layers. The digits on the bottom are 0.2 mm depressed. That makes the first layer a bit more challenging but fits the design way better. In case the model won't print neatly further on after a filament change: A draft shield, wipe tower or any object to consume filament beforehand (establishing good flow by doing so) may help.

Material at one's discretion, I used PETG in two different colors with a 0.6mm nozzle and had Arachne activated in PrusaSlicer.

Where it came from

I already made other radii/diameter gauging tools (The workshop coaster & The radii worm) and didn't plan on making another one. But have you ever had a brain fart that just stuck around, no matter what? → I simply had to double down and make it.

What next

There may be improvements and modifications based on feedback given here. The current font used is OCR-B. The quest for the best printable fonts is not over, just further elaborated here.

Measuring instead of gauging angles can be done with my printable vernier bevel protractor. Efficient identification of metric nuts & bolts can be done with my cylindrical screw measuring tool.

Mentions

Credits to Archimedes of Syracuse, who absolutely died for circles.

Model files

pre-arranged sets 1 file

pre-arranged_all.stl

170mm x 170mm print bed required

individual sizes 26 files

chainlink_05.stl

chainlink_06.stl

chainlink_07.stl

chainlink_08.stl

chainlink_09.stl

chainlink_10.stl

chainlink_11.stl

chainlink_12.stl

chainlink_13.stl

chainlink_14.stl

chainlink_15.stl

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chainlink_28.stl

chainlink_29.stl

chainlink_30.stl

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