



Filament spool bracket for humidity sensor



3DTux

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Summary

Bracket to hold a standard small round humidity sensor in the filament spool central hole, and allow air circulation

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To protect my filaments from moisture, I put them in vacuum bags. In each bag I have a small humidity sensor, visible through the bag from outside. As the center hole of the filament spool is a good location for the sensor, I designed a bracket / holder / adapter to hold the sensor in place, but allowing air flowing from the filament material to the spool hole (otherwise the spool hole air moisture will probably not match the air moisture around the filament, thus the sensor showing an irrelevant measurement).

And I also found out that the filament spools center holes are not standardized (and are conical), thus I created a set of those brackets in different diameters (bracket nominal size written on the 3D models).

Also provided a gauge to easily find out which bracket size will fit into your spool hole, see photos (found out that measuring this hole diameter can be tricky because of fillets and conical shape).

Brackets (size 50mm ... 60mm)

- Prints without supports (supports included in the 3D model, see photos, easy to break away)
- Print upside down (place bigger diameter side on the print bed)
- Uses ~7.6g (size 50) to ~11.5g (size 60) of PLA filament
- The humidity / temperature sensor just snaps in (see photos)

Spool hole gauge

- Print in vase mode (3 bottom layers), place smaller diameter side on the print bed
- Low material use, just 11.3g of PLA filament
- Add markings using a waterproof marker (as shown on the photos)
- The model SpoolHoleGauge-0.2 fits the SpoolBracket models, but I found out printing in vase mode prints too small ...
- The SpoolHoleGauge-nominal is 0.2mm bigger in this case

Humidity sensor details:

- Body diameter: 41mm
- Snapper minimum diameter (= bracket hole): 42mm
- Sensor body height: 13mm
- Sensor model: Search for “mini thermometer hygrometer gauge round”

Happy printing!

Model files

spoolbracket_d50.stl



spoolbracket_d51.stl



spoolbracket_d52.stl





spoolbracket_d53.stl



spoolbracket_d54.stl



spoolbracket_d55.stl



spoolbracket_d56.stl



spoolbracket_d57.stl



spoolbracket_d58.stl



spoolbracket_d59.stl



spoolbracket_d60.stl



spoolholegauge-02.stl



spoolholegauge-nominal.stl

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