



Collet Chuck and Collet Assortment



LoboCNC

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Summary

Securely hold any bit from 0.250" (6.35mm) down to 0.044" (1.1mm).

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After trying out several drill chuck designs (my own included), I've concluded that 3D printed chucks with moving jaws just don't have enough gripping force for common tasks. These collets (similar to ER11 collets), however, can grab onto your bit with much greater force. This collet chuck and collet assortment will handle any diameter from 0.250" (6.35mm) down to 0.044" (1.1mm). I've also included collets for standard 0.250" hex drive and mini 4mm hex drive shanks.

The back side of the collet chuck body has a 0.25" hex socket that can be used to help test the collet chuck, but I've included the STEP file for the parts so that this can easily be re-mixed into your own designs.

Printing

All parts print in the orientations provided and without supports. Print the body and ring with 0.2mm layer thickness and the collets with 0.15mm layers. This will keep the layer lines from aligning and locking against each other as the collet seats into the body of the chuck. Also when printing the

collets, set the perimeter printing speed very low - around 20mm/s. This will help the thin sections print cleanly and fuse the layers fully.

Post-Printing

Assemble the ring onto the body and work the threads back & forth until they feel smooth. Then apply a little light grease or other lubricant to the threads. They should feel buttery smooth. Also carefully apply a very thin layer of lubricant to the inside cone of the collet chuck body. This will help release the collets after they've been tightened down. Just make sure not to get any grease on the inside diameter of the collets.

To use, find the smallest diameter collet that will fit your bit without stretching it apart. Insert your bit into the collet before putting the collet in the chuck and then screw the ring down tight over the top.

Model files



colletchuck-body.stl



colletchuck-ring.stl



collet250.stl



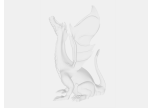
collet125.stl



collet176.stl



collet088.stl



collet062.stl



collethex250.stl



collethex4mm.stl



colletchuck.step

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