

A small Lantern Chuck

By Thor Hansen

I needed a way to hold some small screws and studs when shortening them. I found a couple of ideas on the web and based mine on the one I found at the CGTK website :

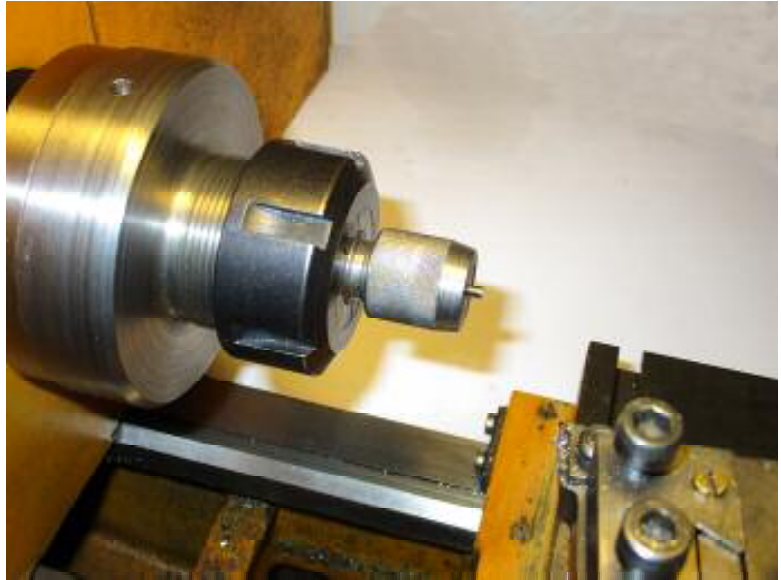
<http://www.cgtk.co.uk/metalwork/minilathe/lanternchuck>. I made mine smaller and simpler.

Materials

I had a piece of HT bolt and used that for the body, the nut was made from 20mm diameter mild steel bar and the collets from 13mm diameter mild steel bar.

Nut

The nut was turned from a piece of 20mm diameter mild steel rod. I chucked the rod in my 3-jaw chuck and faced the end and turned a small chamfer on the end. The outer part was knurled. I used a centre drill to mark the centre of the work and drilled a pilot hole to a depth of 22mm, the hole was opened up to 9mm with a twist drill. I then used a 12mm twist drill but drilled to a depth of around 14mm. I then used a small boring tool and bored the hole to 13mm and to a depth of 15mm, and chamfered the entrance to the hole and turned a groove at the inner end. The tailstock was used to guide the MF14x1 tap. The nut was parted off to a length of 20mm. Later I milled a couple of flats on the nut so I could use a spanner.



Body

I chucked the HT bolt in the 3-jaw self centring chuck and turned down the threads, and after a light finishing cut the diameter ended up at 15.98mm, just right for my 16mm ER-32 collet. The work was mounted in my ER chuck and the outer end was turned down to 14mm for a length of 15mm and a groove turned at the inner end. The 14mm part was screw-cut with a 1mm pitch until the nut was a slightly tight fit.

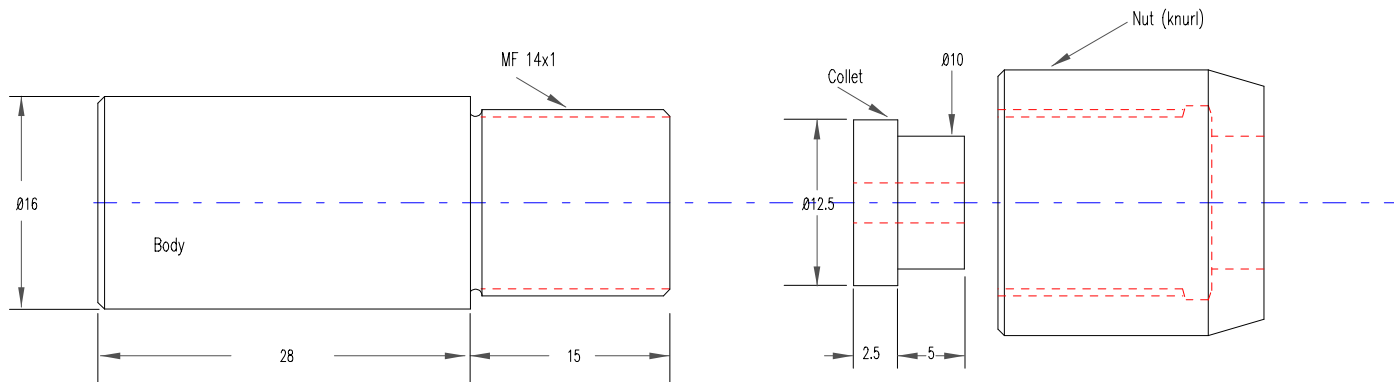
While the body was mounted in an ER 32 collet in the lathe and the nut threaded on tight, the 9mm hole in the end was bored out to 10mm to make sure the 10mm hole is concentric with the body.



Collets

The collets were turned from some mild steel bar. After a light cut on the diameter the bar was faced and a centre drill used to make a small dent and a pilot hole drilled to a depth of 8 to 9mm. The hole was opened up with a tapping drill and the hole tapped. I made collets for M2, M3 and M4 screws, the sizes I use most often. I also heated the collets and dipped them in oil, to give rust protection.





TH	2017	Measurements in mm	©	□
A small Lantern Chuck G.A.				
Material: Steel				