

Burke #4 Vertical Head by Jim B.

The Burke Vertical Head has a B&S taper that inserts into the spindle and is locked in place with a draw bar, just as the B&S 9 collets are locked in place. If you look at the Burke Army Manual, on this site, its item B-5 on Page 9 the vertical spindle accepts a different type of collet, as I remember it's a 3C, at least the Burke Index head uses 3C collets and I don't think the Vertical head would be different. These go into the spindle Item B-11 on page 9.

The casting (B3) has a loop that fits on the overarm. There is an eccentric B24 which can adjust the assembly up and down so the B&S # 9 shank is true with the normal burke spindle, and to tram the unit. The outboard end of the Overarm is not needed although it may be left on.

Once the BS #9 shaft is aligned and inserted into the normal Burke spindle and the shaft is tightened down, the head must be trammed . This means that it must be made NORMAL with the table. To some extent this can be accomplished with the eccentric ring and spanner wrench. Snug but do not tighten the clamp and using a Dial Indicator, held in a collet, swing the dial indicator from the right side of the table to the left side of the table. Record the difference. Reset the DI to zero and adjust the eccentric until you split the difference. Re-Zero and repeat until the difference is acceptable. Usually in the 0.0005" range.

Unlike more exotic mills you must use the table for all Z (up/down) operations. Also, at least on my Burke you should only make up/down adjustments going up.

There are some thing which are easier to do and a horizontal, some things easier on a vertical. Here are a few samples.

First just plain milling. These are fingers for a steady rest. Ease of performance here is about the same as a vertical mill.



http://farm3.static.flickr.com/2270/2187605753_2600c4aa6d_o.jpg

Next; a convex surface. Would require a roundover bit on a vertical and separate milling from both sides, leaving a line down the middle.



http://farm2.static.flickr.com/1104/709359550_033404a3a0_o.jpg

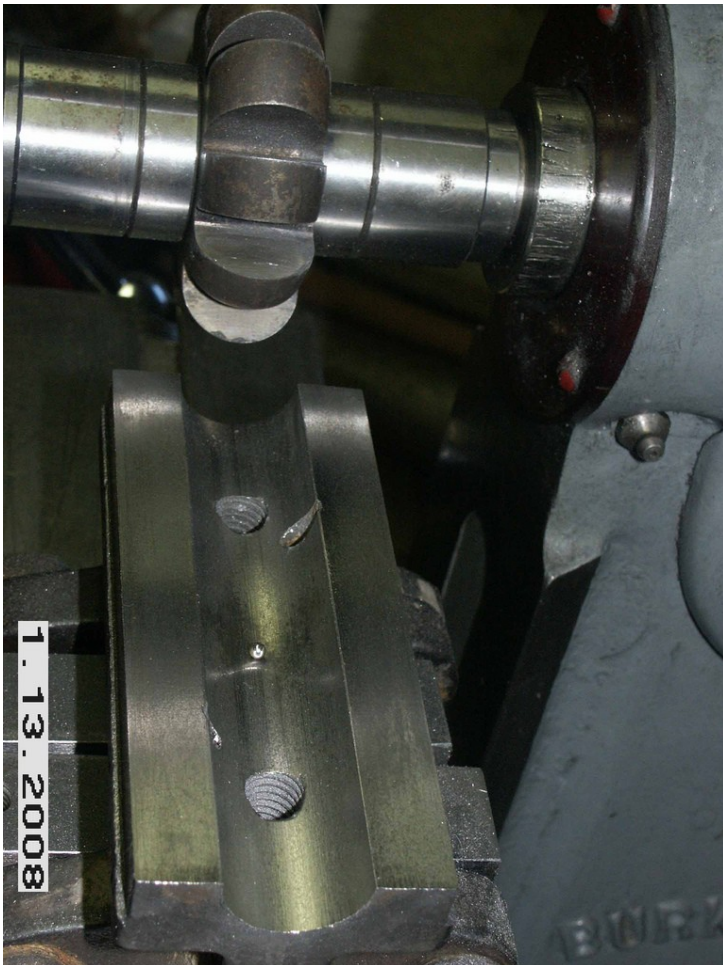
Putting a 5.8 degree bevel on the end of a piece. How would you hold this in a vertical?



http://farm1.static.flickr.com/208/518954597_2dbf37a536_o.jpg

Because of the large number of teeth an overarm cutter can leave a wonderful finish.

With the right tools a round bottom is easy.

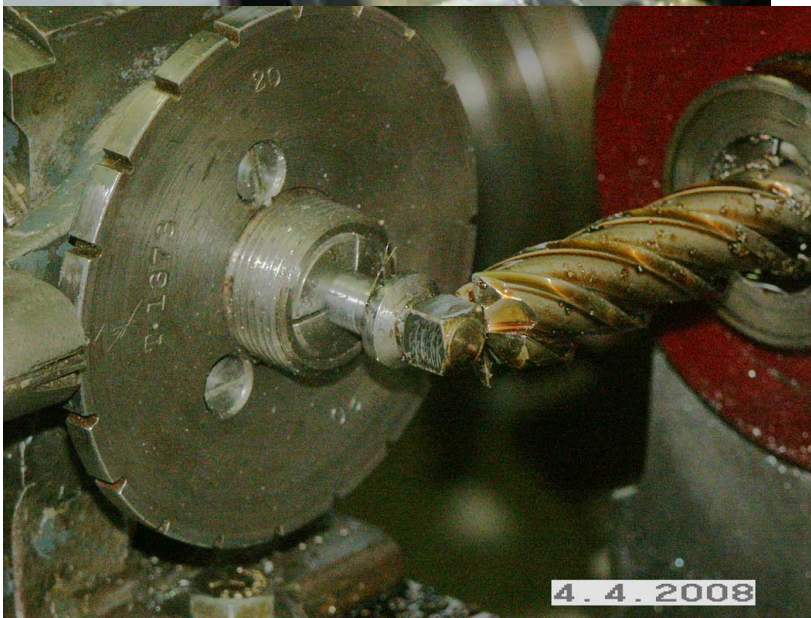


http://farm3.static.flickr.com/2017/2231520169_8310d05a55_b.jpg

Drilling a hole can be a problem. This little adapter uses Y-Type collets and uses up less room than a chuck, However you could go broke buying Y-Type collets. (I have a bunch of extras, in case any one wants some)



http://farm3.static.flickr.com/2084/2188402798_38af23a790_o.jpg



Milling is a matter of thinking horizontal; These are square headed bolts for the SB-9

http://farm3.static.flickr.com/2090/2388219024_734d9f250a_o.jpg

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