

BORING RESEARCH

3-6" Adjustable Spindle Square

The following is an analysis made by me of the 2018 version of the 3-6" Adjustable Spindle Square, made in my shop in Durham North Carolina.

Upon receiving the instrument and opening the case, I was very impressed by the construction, quality and presentation of the instrument as well as the case that came with it. It was clear that during the unboxing of the Adjustable spindle Square, that this unit was of high quality.

The very first step I took was a physically inspect the instrument and look for sharp edges and loose fitted parts. The exterior finish was very well done and discovered not one sharp, ruff, unfinished, or damaged surface. Attention to detail was clearly not overlooked. In moving onto my next step, I used an electronic micrometer to check all dimensions for uniformity. Not having nor expecting to have the engineering drawings to compare against, it was therefore more important for me to check to see how uniform the measurements were from side to side and end to end. Since this is a unique (adjustable) Tramming tool, I found all the measurements to be so close that my digital micrometer found only a 0.0005 difference/variance on very few locations. My micrometer reads to 0.000 position and defaults to a 0.0005 +/- . The indicators were also checked for quality of construction and found to be so.

For this unit, Boring Research states an accuracy of 0.0005" on the indicators. I found that the 2 adjustable black location markers were unable to move completely around the face of the indicator dial by the locking screw and plate that locks the rotating face on the indicator. This however is normal on all indicators I have used over the years, and appears to be the way the indicator manufacturers choose to make their indicators. The indicators read identical, and thus my physical inspection of this instrument is complete. I then moved forward with using this Spindle Square on my Grizzle Model G0755 Mill in order to tram the spindle. Using the widest setting for the indicators, I found the instrument extremely easy and a pleasure to use. My table was out a hair and was able to "true it up" in both directions in short order. Next, I placed my standard machine vice on the table to check its level. For my vice, I had to move the indicators in towards the center one positions on each side. This was accomplished with little effort which allowed me to complete my verification check with very little loss of work or down time. Herein lies the biggest advantage of this instrument.

Tramming tools come in one set dimension which requires a different tramming instrument for different size platforms. For example, I next put a rotary table on my mill, which required a re-positioning my spindle indicators again, this was followed by a three jaw chuck, which again required a re-positioning of the indicators. Even though I only had to use two different positions on the Spindle Square, I did not have to remove it from the mill. That was by luck, because as you move the indicators towards the center positions, they would not be able to be removed completely and re-positioned due to the mills spindle attachment hardware. On my mill, a longer spindle shaft on the instrument would allow for such movements to all four positions. Every alignment process has some inaccuracy in the process, and the machinist must determine what accuracy he or she needs for their job.

In conclusion, I find every little that I would change/recommend with this instrument other than the

length of the spindle shaft which would only present a convenience in some rare instances and thus, may require a cost/price analysis. This of course, is beyond my purview.

I highly recommend this Boring Research Adjustable Spindle Square above all other tramming tools I have used over the years due to the fine machining, engineering, attention to detail of the product and above all, its adjust ability.

W. E. Bailey