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Once the lathe was delivered and leveled out i turned a piece of stock and found a .0022 taper over a 3.687 distance. I let the machine sit for a week (while running off a bunch of small stuff) and checked level during the week and again the following Saturday and it did not move, still nice and flat... so time to adjust the headstock and square it up. In an email earlier i asked Matt (own of Quality Machine Tools, where i bought the lathe from) where the adjusting bolts where (ive never squared up a headstock before) and he said in the back above the motor, so im on my way.

First i chucked up a piece of aluminum stock and took a test cut again (through the whole process the stock was left chucked) .

*Important:* Then i placed a magnetic base holding an indicator and zeroed it on the end of the test piece farthest from the chuck (last image).

Now i wanted to crack loose the bolts which hold the headstock to the bed, two bolts just under the chuck and two bolts just behind the 120/127 gear and found out that i needed to cut a 6mm allen key down by .437 to get it to fit in the pockets to loosen the main bolts which hold the headstock to the bed. ***Note: while cracking loose these four bolts i was paying attention to the indicator touching the test piece making sure it continued to read zero after each set of bolts where cracked loose, this is important.*** After cracking loose the two under the chuck i removed the 120/127 and loosened the left two (just a little), then replaced the gear. When you loosen these bolts you will see that the indicator needle will move, so you will have to play with just how much you loosen them and the same will happen when you tighten them, its important you pay attention to this or you will be chasing your own tail around all day trying to figure out why nothing is working.

With the four main bolts cracked loose slightly i moved the to the back adjusting screws. Its tight back there and i found a ratchet with a socket extensions and socket holding an allen (sorry forget the size) worked pretty well. Now i started to loosen and tighten the correct screws to compensate for the taper. After i got it to where i thought was good i noted where the needle on the indicator was and then tightened the two main bots under the chuck making sure the needle stayed where it should.

Ran a test cut to see where things where and repeated making sure each time i loosened the main bolts that the indicator's needle did not move, made an adjustment, re-tighten the two right main bolts again making sure the needle does not move.

In the end i was able to get it to a .0003 (three zeros there) taper over 3.687 distance which im happy with for now... will check it again in a month or two and see how things hold up.

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3. 30. 2013 22:31

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