Tuner Block for Headless Guitar

Setting up the Tuner Block for 4 Strings. See Note 6

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Notes

1 – THICKNESS OF TUNER BLOCK WOOD - The thickness of the tuner wood needs to be between 9/16” and 11/16” to accommodate the tuners. The closed gear tuners that you can buy from C.B. Gitty and MGBGuitars have roughly a 3/16” range of thickness to deal with (1/2” to 11/16”). If you use open gear tuners, the thickness is determined by the mounting screw depth and the shaft bearing alignment (see note 5 below).

2 – ADJUST MEASUREMENTS ACCORDING TO YOUR DIMENSIONS - This measurement can be adjusted according to neck dimensions. Necks might be thicker or wider than my standard 1.5” x 0.75” neck. Adjust accordingly.

3 – YOUR CIGAR BOX IMPACTS DIMENSIONS AND SIZES - This dimension can be adjusted according to your cigar box and how far you want the tuner knob to be below the tuner block. This hole can be adjusted from ¾” (leaving ½” tuners hanging below the block about ½”) to ½” (with tuner knob just below the block). The drawing below places the tuner at 3/8” (0.4) and allows the knob to hang down 3/8”.

4 – ROLLER BEARING SHAFT - The shaft that the rolling bearings mount on is a hardened 12d finish or common nail (has to accommodate the 4 mm center of the roller bearing. I used a 2 ¾” nail. You might need a bigger one depending your neck and tuner block wood dimensions. I steel woolled mine to make a better surface for bearing to ride on. WARNING: I used a threaded aluminum shaft initially, but it bent with the strain of the string when trying to tune it up. The hardened nail should be fine.

5 - Spacing for Roller Bearings – I set the roller bearing for a three string guitar at ¼” from each end and the center the middle roller. I use nylon spacers. You can use metal or wood. There is not a lot of spinning going on with these bearings, anything that will space without binding, will work. If you are setting this up for a 4 string. See Note 6). NEW IDEA-UNTESTED: It might be possible to build the roller bearing shaft with no spacers. The strings coming off of the bridge rollers, and going over the lower bearing, should stay in place by the mere pressure of the string. It will ‘self-adjust’. SOMEONE TRY IT OUT AND REPORT TO THE COMMUNITY.

6 – Building a 4 String Tuner Block – Construct a second 2-tuner block that mirrors the first. Adjustments will be made in the spacing from the outside of the tuner block to the sting alignment by making your tuner block is 5/8” thick. For this note, we will assume a 1.5” wide neck. The spacing on a 4 string adjustable bridge is 3/8” between the centerline of the rollers. Spacing of the roller bearings should be about the same. The nylon (or what ever material you use, should be 3/16”. The 5 – 3/16” spacers and the 4 - 0.16” bearings is 1.5”. Adjust the spaces as needed.

The inside of the tuner needs to be spaced 7/8” from where you want to wrap your string. So here is the math. The outside rollers are 0.18 (spacer) and 0.08 (center of the roller) for a total of 0.26” (1/4” or 4/16”). If your tuner block is 5/8” (10/16”) this will line up perfectly. To setup the inside strings, the center of the inside bearing will be 0.18” (outside spacer), 0.16” the outside bearing, 0.18” (inside spacer) and 0.08” (middle of inside bearing) for a total of 0.6”. Space your 5/8” tuner block so that it lines up with the bearing. That will be 7/8” from outside of block. Offset your inside tuners as below and vertically if needed. You can probably get away by being out of alignment by 1/8”.

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