



Phi Calipers
Simple device to determine the Golden Mean on your project.
By Capt. Eddie Castelin
Big Guy Productions

Make your own Phi-Calipers

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I was recently asked to reproduce a project which appeared in a woodturning magazine several years ago. It has to do with the Golden Mean or rather, Phi. The Golden Mean is the ratio of 1:1.618, almost the exact ratio of a business card, or many other items you commonly come into contact with. It is a ratio most pleasing to the eye and dates back to when the Romans were turning wood.

To create your own set of calipers:

1. Cut out four strips of wood $5/8$ " wide X $5/16$ " thick by 6" in length. (this can vary when you read all the instructions) This should be very stable wood and you may wish to make this an artful tool. (exotics)
2. Tape the four pieces together, faces to each other, for the next several steps.
3. Sharpen the end of the four pieces to a point, such as in the sketch. Be sure the point is centered on the strip. Sand and clean up all four pieces while they are still taped together.
4. Lay out the penetrations beginning with the measurement from the sharp end of the strips. The first measurement is the long point. The second measurement is the short point.
5. The long point for a 6" strip should be $3\frac{1}{4}$ " This is from the point to the center of the first hole.
6. The short point for a 6" strip should be 2". This is from the center of the first hole to the center of the second hole. Both should be centered in the strip.
7. Drill these holes with a sharp $1/8$ " bit to reference them.
8. Depending on the hardware you use, enlarge the holes to create a snug fit for the fastener passing through it. If you are using short binding posts, the hole in the top leg will be larger than the hole in the upper leg. If you find binding post with $1/2$ " tall posts, the holes can be the same size.
9. In leg #3, you need one additional hole. This one is 2" towards the sharp tip from the first hole you laid out. Only drill one strip like this.
10. Trim strips #3 & #4 as shown on sketch.
11. You can round off all the ends which are not sharps to make a more pleasant looking tool.
12. Assemble your tool. When complete check the math. To keep the screws from backing out, put a drop of CA on the threads after checking the operation.

I mentioned that the size of the strips can vary. This entire pantograph is controlled by the relationship between the holes and the tip. The distance from the upper hole to the center hole is equal to 1 (one). The distance from the center hole to the tip is 1×1.618 (one times 1.618). No matter how big or small your caliper, this is what makes them work. Good luck with your project.



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