

Multiple Thread Wraps 11 Taper Offset Spacing (TOS)

Taper offset spacing is the process of placing your layout threads on the axis of the blank in such a manner that when the subsequent pattern is wrapped and closed there are no gaps or overlays between the patterns. This process is particularly needed when the cross wrap is placed on an area of the blank with a taper. There are several methods to obtain the TOS, which have been referenced in the previous article, Cross Wraps 10. Billy Vivona very well covers these methods in his article, Decorative Butt Wraps, which is available in the Guild's Library. Other methods have been regular topics in past RodCrafter Journals.

Most of the methods require measurements and some use of mathematics. Some builders have asked for simpler terms and techniques in order to do a taper offset layout. The following is a method learned from RodCrafters many years ago, which seems to work quite well.

After finding and marking the axis of the blank to be wrapped, the next step is to mark the blank where the cross wrap is to begin and end. Leave enough space in front of the handle for the tie off wraps when the cross wrap is finished.

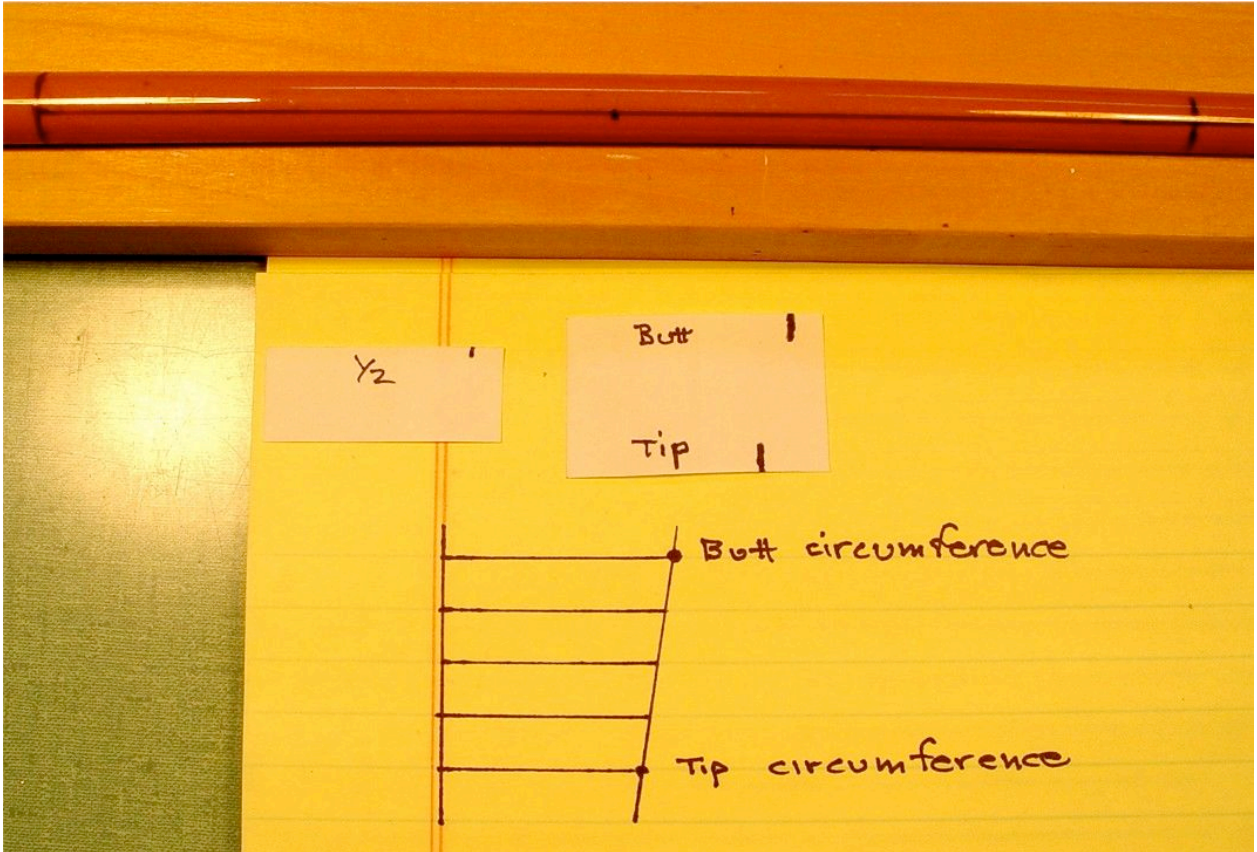
In the following example the area for the cross wrap is marked at both ends. Find the center of the cross wrap area and wrap a slip of paper or piece of tape around the rod and mark it where the overlap occurs. This gives you the circumference of the rod in the center of the future wrap. Then place calipers or compass on the slip of paper from the edge to the overlap mark. Using that setting on the calipers start at the butt end mark on the rod and by rotating the calipers down the axis, this will give you an estimate of the number of cross over points there will be in your cross wrap. In this example there were five cross over points along the axis. There may be some space left over on the axis, but don't worry about that because you will most likely cover it with the tie off wrap.

Knowing that there will be five cross over points in the cross wrap, the next step is to find the circumference of the rod at the butt end of the wrap and the tip end of the wrap. Using a slip of paper again wrap it around the point where the design will start at the butt of the rod and mark the point where the paper overlaps. Do the same for the point where the design ends towards the tip of the rod. The same slip of paper can be used for both measurements, but be sure to label the marks.

Using a ruled piece of paper with a vertical margin line at the left side and the slip of paper marked with the circumferences, the TOS can be laid out graphically on the ruled paper. Transfer the circumference of the butt to the top line of the paper beginning at the left vertical margin. Since there will be five cross over points in the wrap, count down the first five lines on the paper and transfer the tip end circumference to the fifth line. Using a ruler connect the two circumference markings with a straight line. You now have the distances figured out for the tapered offset layout. They are the distance between the left hand margin line and the right hand line.

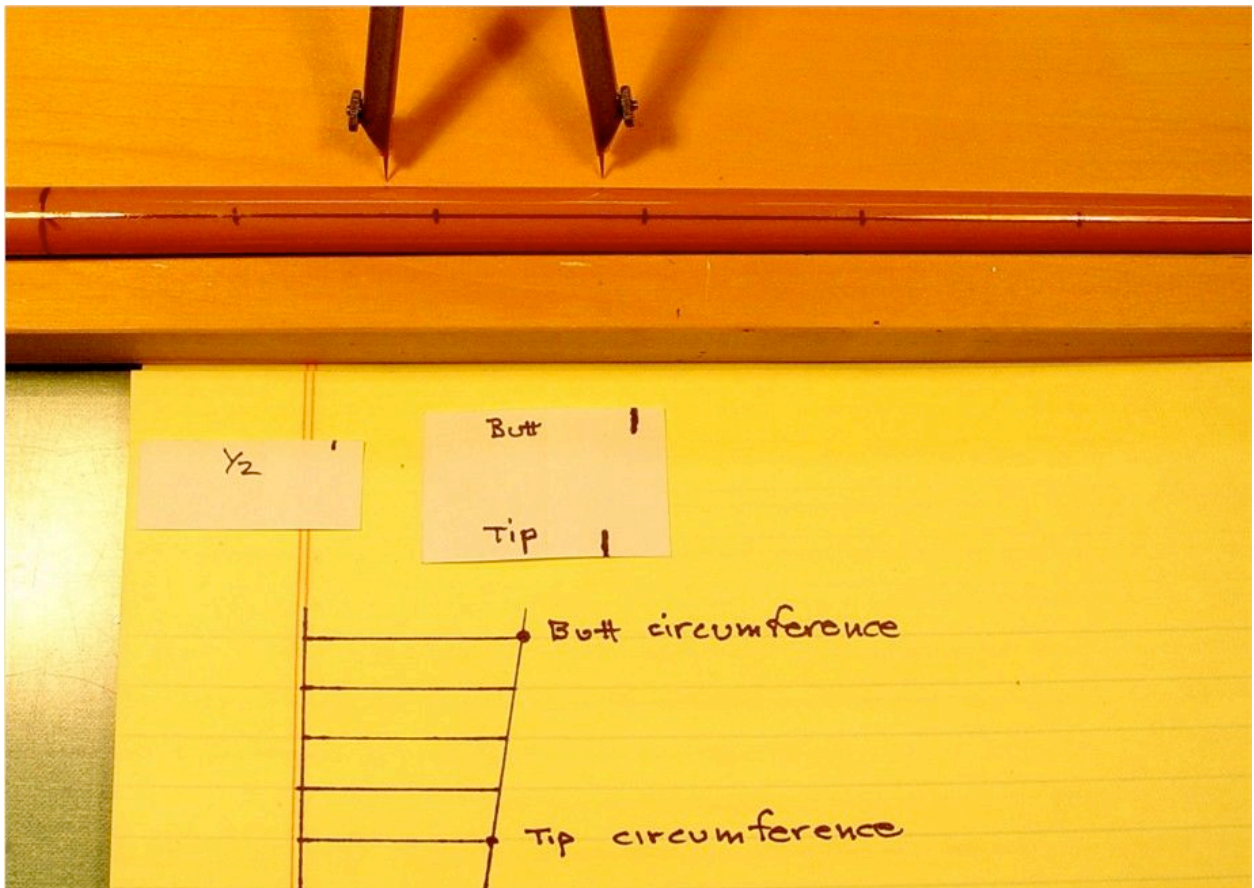
However, when you layout these distances on the axis, start with the TIP end measurement and place that distance beginning from the BUTT end marking. The next distance going toward the tip will be the next line above the tip distance on your chart. Continue working up each line and transferring that distance to the rod blank until the last line (the butt circumference) is transferred to the tip end of the axis. The distances on your chart are reversed during the layout on the rod blank, so the smallest distance is closest to the butt end and the longest distance is closest to the tip of the rod. These variable distances between the cross over points will allow for the taper of the rod in a closed wrap.

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continued



This photo shows the axis on the rod, the butt end mark, the tip mark and the dot in the center. The slip of paper with $\frac{1}{2}$ on it is the circumference at the halfway point. The other slip of paper shows the circumference of the butt and tip. The distance is measured from the left hand edge of the paper to the marks. Using those distances the chart below them was made. The five lines represent the five distances between cross over centers.

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This photo shows the calipers used to transfer the measurements from the chart to the rod blank. Notice the shortest distance is next to the butt end (left) and the cross over point distances increase as they go toward the tip. This tapered offset layout process is simple, quick and effective. Good luck!