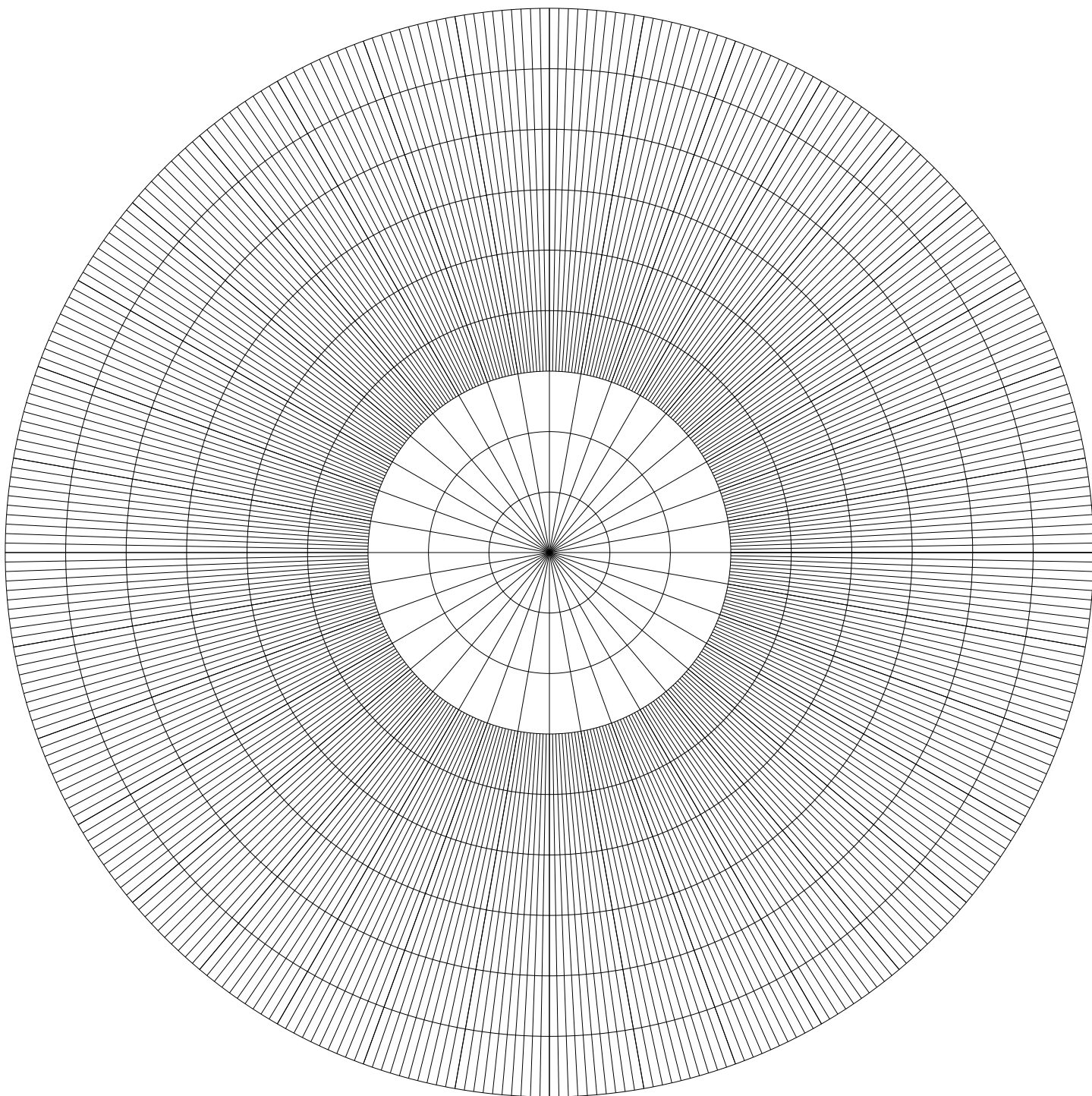




For the cam sprocket alignment, WSM calls for using three M5x15mm bolts to hold the sprocket in place while tightening the center M10 bolt. I used M5x16mm socket head cap screws. The tool is held aligned in place using two of these bolts and two 1/4" drive 4mm hex bits.

To avoid parallax reading errors, the scale uses dual tick marks. Minor tick marks are every 1 degree of cam rotation. The scale's two darker tick lines mark the sprocket's deep notch. The "double arrow" marks the location for the TDC#1 cam marker, while the "single arrow" marks the adjacent tooth. Aligning the sprockets using two markers provides greater readability accuracy than with using just one.

To make the tool, I punched the alignment holes using a 5/32" hole punch. These holes are just slightly smaller than the 6mm bit, so I needed to further widen the holes using the 4mm hex bits. The scale was printed using a laser printer then cut out and glued to the aluminum sheet with rubber cement. For the scale, I used this web site to generate a polar plot... <https://incompetech.com/graphpaper/polar>. Configuring the web page parameters were...

- 9 concentric circles
- 36 primary spokes
- 360 secondary spokes
- line color black

Then using Acrobat, I added the tick marks and arrows.