

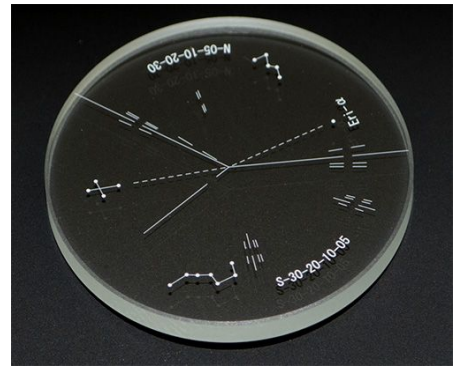
# How to Update Your Polar Finder's Reticle

## Introduction

These instructions allow you to update your telescope mount's polar finder reticle pattern to cover dates out to 2030.



Included in the kit are the reticle itself (right), and an allen wrench (left) used to adjust the fine screws holding the reticle.



In addition, you will need to provide a small photographic lens/filter spanner wrench, which can be found at stores carrying photographic accessories or online at Amazon as in this example:  
[https://www.amazon.com/Neewer-Professional-Stainless-Spanner-Opening/dp/B00J5F6Z12/ref=sr\\_1\\_10?ie=UTF8&qid=1475295981&sr=8-10&keywords=spanner+wrench](https://www.amazon.com/Neewer-Professional-Stainless-Spanner-Opening/dp/B00J5F6Z12/ref=sr_1_10?ie=UTF8&qid=1475295981&sr=8-10&keywords=spanner+wrench)



## Step 1. Polar Finder Disassembly

The first step is to remove the polar finder from your mount and unscrew the eyepiece lens as shown at right. This allows access to the retaining ring holding the reticle. Unscrew the long objective lens side of the polar scope also to make it easier to work with the reticle section of the polar scope.



## Step 2. Reticle Assembly Removal

Using the spanner wrench, remove the retaining ring in the reticle assembly. The retaining ring is likely to be held in with Loctite or similar thread-locking glue. For Loctite, use alcohol to loosen the glue.

The reticle assembly appears as shown at left.

## Step 3. Remove Reticle from the Reticle Assembly

At this point, the reticle glass is still held by 3 small adjustment screws. Loosen the screws with the supplied allen wrench until the reticle comes out of the barrel of the assembly.

## Step 4. Insert the New Reticle in the Reticle Assembly

Place the new reticle into the reticle assembly and loosely replace the retaining ring. The retaining ring should hold the reticle, but must be loose enough to allow adjustment of the reticle position in the next step. Take care to orient the reticle with the correct side (i.e. readable numbers) toward the eyepiece end of the polar scope.

## Step 5. Reticle Alignment

The purpose of this step is to align the center of the reticle (where the radial lines of the reticle converge) with the center of the polar scope's tube.

To do this, the polar scope needs to be pointed at a distant stationary target and rotated while observing if the center of the reticle wanders from the center of the scope. Note that this is done on a fixed target during daylight, and not on a star at night.

The alignment check can be done by re-inserting the polar scope into the mount's polar axis or by resting the scope in a machinists' v-block (example at right). Adjust the 3 small screws with the allen wrench, until the reticle is centered. Rotating the polar scope should not cause the center of the reticle to wander away from the target in the polar scope when the reticle has been properly centered.



**NOTE: Do not apply excessive pressure to the reticle by over-tightening the adjustment screws. Loosen screws first before tightening opposing screws. Excessive pressure may crack the reticle glass.**

## Step 6. Finishing Reassembly

Once the reticle has been adjusted, tighten the retaining ring (do not over-tighten). Apply a drop of Loctite to a spot at the retaining ring thread to insure that the assembly does not vibrate loose. Re-attach the eyepiece to the polar scope and insert the polar scope back into the mount to complete the procedure.