

Diopter Adjustment

By: glassaholic

Here is my recommendation, but I don't take all the credit, much of this comes from advice provided by hk dave, Ilya and my eye doctor:

1. Initial setup: Set magnification to highest setting and set side focus to infinity. Loosen the lock ring in front of the eyepiece (if it has a lock ring) and while looking at a blank wall or the sky, rotate the diopter several turns counterclockwise (in the positive + direction) until the reticle is visibly out of focus. One of the most important things is to not stare continuously through the scope. Make sure you have something distant to look at when you look away from the scope. Then glance through the scope for no more than a few seconds. Then stare out at a distant object again while making a small adjustment. Then rotate diopter back clockwise until the reticle is focused as sharply as possible.
2. Fine tuning: Find a target that is very far away, so that it looks sharpest when the side focus is at the infinity setting. As you look through the scope (important that it remains steady) you can mess with the diopter by making minute adjustments either CW/CCW and see if the reticle and/or image improves any. You can also check parallax to ensure that small head movements don't cause the POA to shift. When the target is in the best focus there should be no parallax movement, if there is parallax movement with slight movement of your position behind the scope then try to fine tune so the reticle stays locked on target with no movement.
3. Closeup tuning: Now find a target that is closeup, say 100 yards away, set your side focus until the object comes into best focus, does the reticle still look sharp? Check parallax to make sure there is no shift. Make minute adjustments to diopter if necessary. Check back at long distance and make sure parallax and focus are still good to go.
4. Final reticle adjustment: This should be done when you have nothing else to focus on within the FOV other than the reticle. Set your magnification to the lowest setting where you can still define all the hash marks of your reticle. You can either do it while pointing at a blank light-colored wall (keep the side focus at the infinity setting, so any of the minute features on the wall are blurred out) or at the blue sky. One of the most important things is to not stare continuously through the scope. Make sure you have something distant to look at when you look away from the scope. Then glance through the scope for no more than a few seconds. Then stare out at a distant object again while making small adjustments.

Once you've performed the above 4 steps you should be set with your scope, it might be wise to mark your ocular and the scope tube with a pen or marker (especially if you don't have a locking diopter) so you can return to this position if your scope is ever bumped out of alignment.

By: hk dave

I feel like it is important to note that with First Focal Plane reticle scopes, your diopter setting can be crucial. It can make the final difference in image quality and whether your optimum point of optical sharpness coincides with it also being parallax free.

There are quite a few posts and "tutorials" on how to do this correctly, from pointing the scope at a clear blue sky to using the illumination in a dark environment.

The only issue I've had with these methods is that despite being middle aged, my eyes still focus very quickly and it's difficult for me to NOT get a sharp reticle.

I reached out to a snipershide member about a problem I was having with my TT, and he explained how he set his up.

So following his lead, I essentially set up a target and used the parallax knob to get the sharpest image possible. I then adjust the diopter to get the sharpest reticle possible then check for parallax. I did this back and forth until I got a parallax free image with the sharpest image possible and sharp reticle. Then tested parallax at different distances to be certain.

I've found great success with this method and gave me some relief as I was starting to get concerned that I had a bad TT.

All 5 scopes have euro style fast diopter adjustments. What this means is, it only takes a few turns to adjust the diopter, as opposed to 30+ turns.

I prefer the euro style adjustments considerably more as I have a difficult time even get a reticle to turn blurry on the slower/finer adjustment type diopters.

The TT, Minox and NF have locking diopters, which I think is nice to have so they definitely have an advantage over the others. The S&B and Vortex lack this option however I simply use a sharpie to make a witness mark on the scope so if I ever turn the diopter by mistake, It's easy to get back to the exact point I want it to be.

HK Dave

I would start with finding a target that is very far away, so that it looks sharpest when the side focus is at the infinity setting.

Then, you can mess with the diopter a little to get the reticle into focus. This gets you in the ballpark, but not all the way there.

Final reticle adjustment should be done when you have nothing else to focus on within the FOV other than the reticle. You can either do it while pointing at a blank light-colored wall (keep the side focus at the infinity setting, so any of the minute features on the wall are blurred out) or at the blue sky.

One of the most important things is to not stare continuously through the scope. Make sure you have something distant to look at when you look away from the scope. Then glance through the scope for no more than a few seconds. Then stare out into the distance again while making a small adjustment. Then glance through the scope again for a few seconds. That should tell you if the reticle got blurrier or sharper and if you are adjusting in the right direction.

Nice scope choice, by the way.

ILya

Recommendation on rotating counter clockwise and then going in:

Simply loosen the lock ring in front of the eyepiece and while looking at a blank wall or the sky, rotate the eyepiece several turns counterclockwise until the reticle is visibly out of focus. Then turn back clockwise until the reticle is focused as sharply as possible. Verify the focus on a distant target and make fine adjustments from there. Then, tighten the lock ring and you're done.

From: http://www.opticstalk.com/adjusting-the-eye-piece-focus_topic11602.html

Poster: Dolphin

Just remember that the diopter correction of the front eye piece of your scope is doing the same thing that a pair of reading glasses is doing. If you are trying to read something up close and you are older and suffering from presbyopia, where your lens in your eye does not thicken when relaxed to refract and focus the image presented to you properly on the retina, it will be out of focus. The fast focus eyepiece or diopter correction will do this refraction for you so you will not have to use eye glasses while shooting. The reticle is within reading distance as well as the image, because you are seeing it off of the ocular lens making it in the near field, not in the far field as if you were looking at the same image without the scope.