

Procedure to sight-in 45° offset red dot sights



An offset red dot sight is a very practical way to add tactical capabilities to a rifle with a high power scope. With a little tilt of the rifle on the shoulder the shooter becomes capable of keeping both eyes open for maximum peripheral awareness while being able to engage close or moving targets. However, sighting-in such sight is not an easy task. For a sight positioned in the first quadrant (upper-right as shown in the picture) one MOA adjustment up on the elevation turret moves the point of aim 0.71 MOA up and 0.71 MOA right. One MOA adjustment right of the windage moves the point of aim 0.71 MOA right and 0.71 MOA down.

To keep the math simple I recommend roughly sighting-in the red dot to shoot somewhere in the *third* quadrant of the bullseye (low and left). A good way is getting the rifle as steady as possible with the scope aiming at the bullseye and “walk” the windage and elevation of the red dot until the dot looks slightly left and below the bullseye. Shoot the gun aiming with the red dot and measure the necessary Adjustment Up (AU) and Adjustment Right (AR) in MOA. Then calculate the Elevation Adjustment Up (EAU) and Windage Adjustment Right (WAR) using the following equations:

$$EAU = (AU + AR) / 1.41$$

$$WAR = (AR - AU) / 1.41$$

Example: After a rough adjustment at 50 yards the point of impact is 4 inches low and 7 inches left of the bullseye. This requires a 8 MOA adjustment up and a 14 MOA adjustment right in the red dot sight. So move the elevation turret:

$$(8+14)/1.41 = 15.6 \text{ MOA UP}$$

and the windage turret:

$$(14-8)/1.41 = 4.2 \text{ MOA RIGHT}$$

Notes:

- 1) The equations work for test shots in any quadrant as long as you keep your -/+ signs straight!
- 2) Use the square root of 2 instead of 1.41 if you are a perfectionist ☺
- 3) The equations are easily adjustable for sights installed in the fourth quadrant

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