PRIMARY ARMS®

4-14X44 FIRST FOCAL PLANE SCOPE

WITH R-GRID 2B RETICLE

MANUFACTURER PART NUMBER	UPC	FINISH
PA4-14X44FFP-R-GRID-2B	8 18500 01305 1	MATTE BLACK

Thank you for choosing this Primary Arms optic.

If you have any questions about your new optic or any of our other products, visit us at www.primaryarmsoptics.com, email us at info@primaryarmsoptics.com, or give us a call at 713-570-1910. The customer service team at our headquarters in Houston, Texas will respond promptly.

If you have any problems with a Primary Arms product, we urge you to contact us immediately and let our customer service professionals handle the situation for you. There is no need to return the scope to your retailer.

THE 4-14X44 FFP SCOPE

The 4-14x44 First Focal Plane scope is a proven tough rifle optic featuring clear glass, side focus parallax adjustment, red reticle illumination, and resettable target turrets. Both the reticle dimensions and turret adjustments are measured in Milliradians (MIL or MRAD) for easy zeroing and shooting. The Ranging Grid reticle is optimized for medium to long range engagements at higher magnifications, without sacrificing quick sight picture acquisition at close range and lower magnifications. R-Grid 2B includes automatic ranging for standard size targets, a 0.1 MIL precision ranging section, and a MIL based grid giving you the ability to “hold over” on target without manually adjusting the scope. It is very fast at 4x magnification and extremely accurate at 14x magnification, remaining true at all magnifications.

ACHIEVING A CLEAR RETICLE PICTURE

Your 4-14x44 FFP scope comes with an adjustable Diopter Ring (E) that must be set to match your eye. Located at the rear of the eyepiece, it is marked simply **[+ 0 -]**. The diopter ring changes the focus of the reticle as you see it inside the scope. It does not change the focus of objects that you look at through the scope. Setting the diopter is a **critical first step** to successful precision shooting. You can set the diopter before you have even mounted the scope in its rings.

1. Turn the Power Ring (D) to its highest setting, 14x, and point the scope at a bright, featureless background such as blue sky or a blank white wall.

2. Turn the Parallax/Side Focus Knob (G) to infinity [∞].

3. With your head in position behind the scope, look at the wall or sky instead. If you look through prescription glasses when shooting, wear them now too. After 5 or 6 seconds, close your eyes.

4. Now open your eye, glance through the scope and immediately see if the reticle is sharp or blurry. If you notice that the reticle seems blurry at first and then suddenly sharpens, your eyes have focused on the reticle itself instead of looking **through** the scope. You must adjust the diopter ring and try again.

5. If the reticle was blurry, turn the Diopter Ring (E) and repeat the process again. The process will take multiple adjustments. Each time you repeat the process, ask yourself if the reticle was sharper or more blurry than before. The final adjustments may be very fine. If your eyes get watery or tired, walk away for a bit and come back to this later.

6. Once the reticle appears sharp as soon as you glance through the scope, the diopter is set for your eyes. Everyone's eyes are slightly different, so the ideal adjustment changes from person to person. Many shooters will mark their correct diopter position with a little dab of paint or fingernail polish next to the **0** mark, in case the ring gets turned accidentally later on. Others will apply electrical tape around the diameter of the ring to hold it in place.

This is a one-time adjustment. Reticle details may appear small when not looking at medium or long range targets, especially at low magnification. Shooting at those ranges is best done from a well-supported position using a bipod or sandbags.

ADJUSTING PARALLAX

The Parallax/ Side Focus Adjust knob (G) is located on the left side of the scope, marked with ranges from 10 yards to infinity. Although it is often referred to as a “side focus” knob, parallax and focus are not the same thing. Parallax error occurs when the target’s image and the reticle are not aligned on the same focal plane inside the scope. To visualize this, pick a picture on the wall of a room as your “target”, and stick your thumb up in front of it like you are a hitch-hiker. Your thumb represents the reticle of the scope. Closing one eye and using your thumb to “aim” at the picture on the wall, you will notice that moving your head around changes where your thumb appears to be aimed. This is because your thumb is not located in the same focal plane as the picture on the wall. Any slight change in your head position will change your point of aim, and your point of impact. Adjusting the Parallax/Side Focus Knob (G) eliminates parallax error at different ranges by bringing the reticle into the same focal plane as the target, like having a friend place their thumb directly against the picture on the wall. Parallax error is most noticeable at high magnifications. Adjustment is much easier with your rifle secured by sandbags or a bipod.

1. Turn the Parallax / Side Focus knob (G) until the target appears to be in focus. This will get you close to the correct adjustment.

2. Looking through the scope at the target, move your head just slightly from side to side. If you lose the sight picture you are moving too much. Go slowly, and see if the reticle appears to move relative to your target. A target that appears to be floating around the reticle as you move your head indicates parallax error.

3. If the target appears to move in the opposite direction of your head, turn the Parallax/Side Focus Knob (G) counterclockwise. If the target appears to move in the same direction as your head, turn the Parallax/Side Focus Knob (G) clockwise. These adjustments are very small. Move the Parallax/Side Focus Knob (G) just a little bit at a time and re-check.

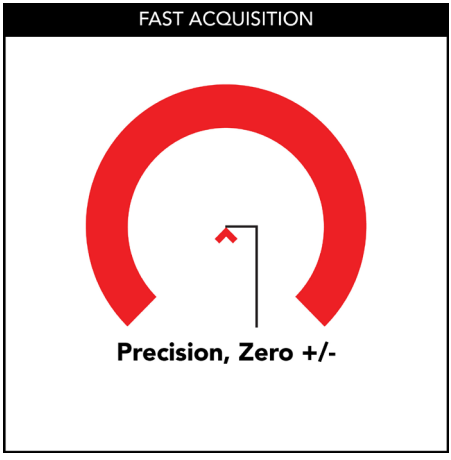
4. Once the reticle and target hold their positions as you move your head from side to side, parallax error is eliminated for targets at this range. Normally this adjustment will also keep the target nicely in focus. However, to gain the most consistent hits on target, it is more important to eliminate parallax error than to have the target perfectly in focus.

RETICLE ILLUMINATION

The Illumination Knob (F) on the left side of the scope is marked with numbers of increasing brightness from 1 to 6. Between each number is an OFF setting. The cap unscrews counterclockwise, holding a CR2032 battery with the positive (+) side facing towards the cap. Reticle illumination at the lower settings is useful in low light situations like sunrise and sunset, or indoors. The two brightest reticle illumination settings in your Primary Arms scope are designed for day time use only. Reticle “bleed out”, abnormalities and small imperfections may be visible when viewed indoors or in low light conditions at these two settings. This is a normal result of the reticle etching process. Abnormalities at these settings will not be visible when viewed in daylight conditions. Using these settings in low light situations will also overpower your eye’s ability to see the target. The right amount of illumination creates a clear contrast between the reticle and your intended target, without straining the eye.

ESTABLISHING ZERO

Using a bipod or sandbags, preferably on a bench or in the prone position, turn the Power Ring (D) to a high magnification to see your target as easily as possible. When sighting in your rifle, if your shots are hitting low, turn the Elevation Adjustment Knob (C) counterclockwise to bring the point of impact up. If your shots are hitting to the left, turn the Windage Adjustment Knob (B) counterclockwise to bring the point of impact right. Each click will adjust the point of impact by 0.1 MIL, or approximately 1/3 inch at 100 yards.



RESETTING ZERO FOR WINDAGE AND ELEVATION

You can reset your Windage (B) and Elevation (C) Knob positions to read “zero” after sighting in your rifle. Using the supplied 3mm Allen head wrench, turn the locking screw counterclockwise and remove it. Carefully pull the outer knob straight away from the scope tube until it comes completely off. Line up the 0 mark with the center line underneath, and press the outer knob straight towards the scope tube to reinstall. Finger pressure is all that is needed. With the outer knob reinstalled, hold it still with one hand while tightening the locking screw with the other hand. Do not over torque the locking screw.

RESETTABLE ADJUSTMENT KNOBS

ACCESSORIES AND MORE INFORMATION

The Primary Arms sun shade (SKU: PA4-14SS) is a useful addition to your 4-14x44FFP scope. The sun shade can prevent glare when shooting in bright sunlight at certain angles, and can keep water away from the objective lens in the rain. The sun shade easily screws into the objective bell of the scope with no tools needed. PA4-14SS is available for purchase separately.

For faster manipulation of the scope's magnification, a "cat tail" or "switch view" lever can be attached securely to the power ring. Compatible levers include 3 Gun Stuff product GS-440 or Warne Scope Mounts product SV167-171.

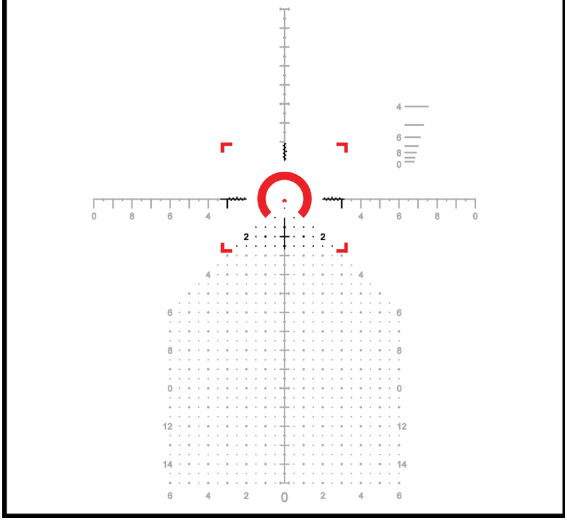
THE R-GRID 2B RETICLE

R-Grid 2B uses a bold horseshoe for fast target acquisition at closer ranges and lower magnifications. A center chevron provides an infinitely small aiming point for precision shooting. Overall, the reticle extends 10 MIL up, left, and right of the center chevron aiming point, and 15 MIL down. Large hash marks are found in 1.0 MIL increments, with smaller marks between them at 0.5 MIL increments.

THE HORSESHOE

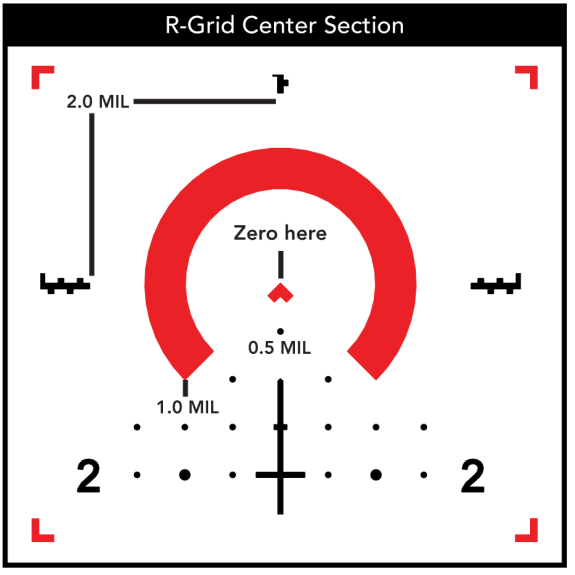
Due to the first focal plane construction of this scope, the horseshoe will appear to “shrink” and “grow” as magnification changes. At 4x magnification the horseshoe becomes a small ring that grabs the eye instantaneously for an extremely fast sight picture. When the target is relatively close and reflexive shooting is needed, simply hold the target inside the horseshoe or roughly center the horseshoe over the part of the target you want to hit, and you are ready to fire immediately. The inner edges of the horseshoe are located 1.0 MIL away from center, with lower tips of the horseshoe located 1.0 MIL down from the horizontal crosshairs and 1.0 MIL away from the vertical crosshairs.

R-Grid 2B Center Section



THE CHEVRON TIP

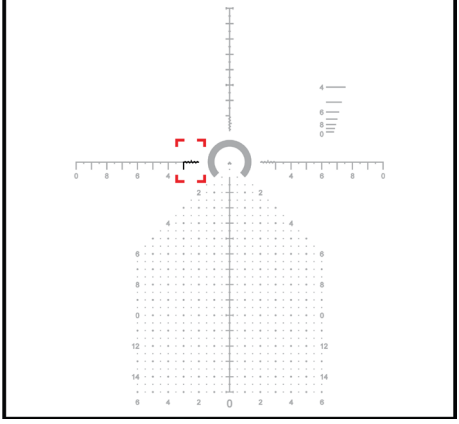
R-Grid 2B uses a chevron as the center aiming point of the reticle. When zeroing your rifle, adjust your Windage (B) and Elevation (C) Knob positions so that the point of impact coincides with the tip of the chevron. Using the chevron tip allows for an infinitely small point of aim that never covers up the part of the target you want to hit, giving the chevron tip a precision advantage over traditional crosshairs or a center aiming dot. A single dot is placed 0.5 MIL down from the chevron tip. More dots are placed at 0.5 MIL intervals moving down and left/right of center.



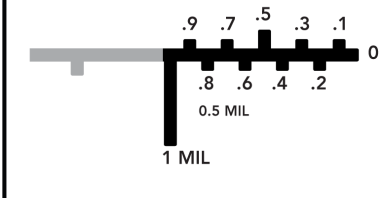
THE R-GRID 2B OUTER SECTION

At 2 MIL distance left/right from center, the solid crosshair line begins, using alternating upper and lower marks forming a MIL ranging section. These can be used to range targets using extremely fine 0.1 MIL increments. At 3.0 MIL from center, the 0.5 MIL hash marks begin.

R-Grid 2B Tenth MIL Section



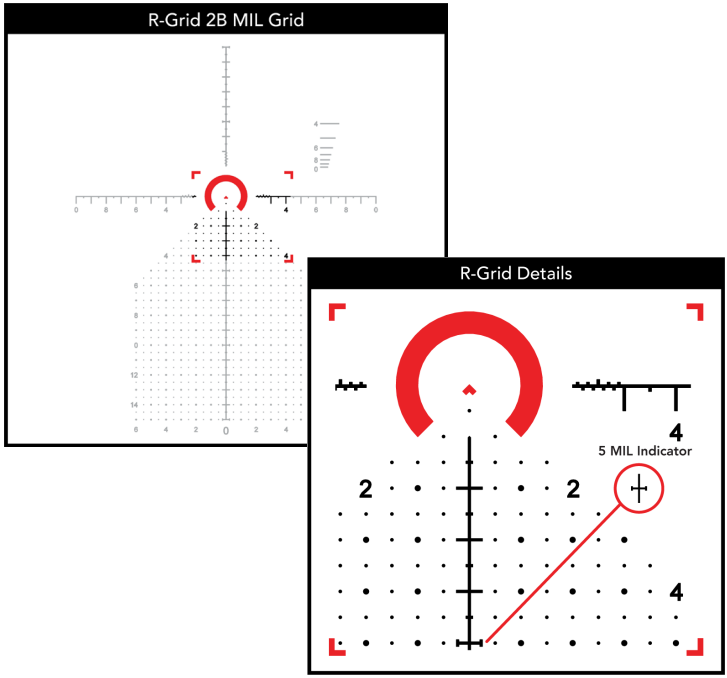
Tenth MIL Section



THE MIL GRID

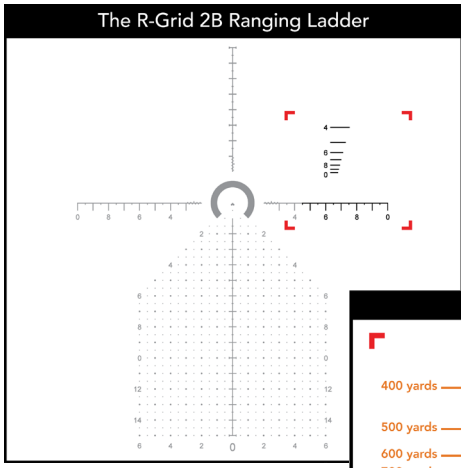
The MIL grid consists of small 0.05 MIL thick dots located at intervals of 0.5 MIL below center and 0.5 MIL left/right of center. The grid continues downwards adding a dot or number every 0.5 MIL. The full grid reaches 15 MIL down and 6 MIL left and right of center. To help with navigation, at 1.0 MIL intervals the dot size grows to 0.1 MIL thickness. Numbers 2, 4, and 6 located on the outer edges of the grid represent total MIL both down from center and left or right from center. Numbers 8 through 14 represent total MIL down from center, but the grid stops expanding to the left and right at 6 MIL.

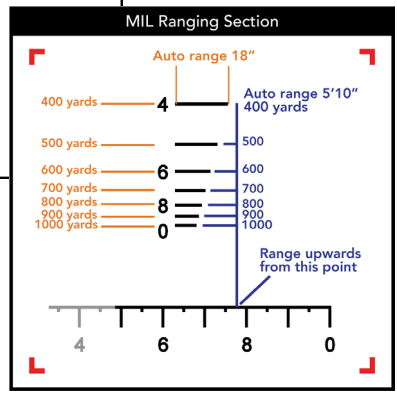
Beginning 1.0 MIL below center, the centerline “backbone” crosshair features small hash marks that extend just 0.1 MIL left and right from center, alternating with large hash marks measuring 0.5 MIL left and right of center. To help with navigation, every 5.0 MIL the large hash marks are embellished with indicator bars on the ends, giving them a distinctive barbell shape.



THE RANGING LADDER

Located high and right of center is the ranging ladder. Vertical ranging is calibrated for a 5’10” tall target. Looking through the scope at the target, line up the bottom of the target with the horizontal crosshair. The line that coincides with the top of the target indicates the distance to the target. For example, if the top of the target touches the line with a “4” next to it, the target is 400 yards distant. The ranging lines may be used as reference points to make more precise, yet quick ranging determinations. For example, a 5’10” target with its top midway between the “4” line and the “5” line will be approximately 450 yards away.





Horizontal ranging is calibrated for an 18” wide target. Simply line up the target’s width with the appropriate line to determine range to target. For example, an 18” wide target that appears to be the same width as the ranging line with a “6” next to it will be 600 yards away. This method is useful when the target’s height is partially obscured, as with a target in tall grass.

HOW TO RANGE ESTIMATE USING THE 0.1 MIL RANGING SECTION

The 0.1 MIL ranging sections are displayed starting 1.0 MIL vertically and 2.0 MIL horizontally away from the center chevron. Due to the first focal plane design of this scope, you can perform ranging at any magnification, but using high magnification usually gives the best results. Starting at the edge of the section, each bar and gap are exactly 0.1 MIL apart.

To range estimate a target in yards using the milliradian system, take the following steps:

1. Know your target's height or width in inches. For example, this target is 18 inches wide.

2. Multiply the 18" target size by the MIL conversion number 27.78.
18 x 27.78 = 500.04

Therefore an 18 inch wide target, converted, equals approximately 500.

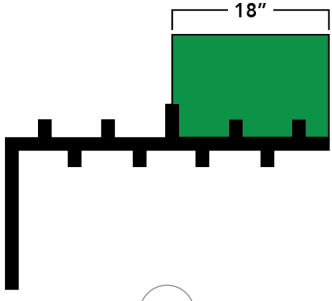
3. With the target downrange, look through the scope at high magnification and measure the target using the 0.1 MIL section. In this example, our target measures only 0.5 MIL wide.

4. Take the converted 18" target number (500), and divide it by the 0.5 MIL measurement observed through the scope.

500 / 0.5= 1000

This target is 1,000 yards away. You can take any target's known size in inches and multiply it by the conversion number 27.78. Observe the target's measurement in MIL, and divide it by that measurement to determine the range in yards. The general formula is:

(Target size in inches) x (27.78) / Target measurement in MIL = Distance in yards



USING THE R-GRID 2B IN THE FIELD

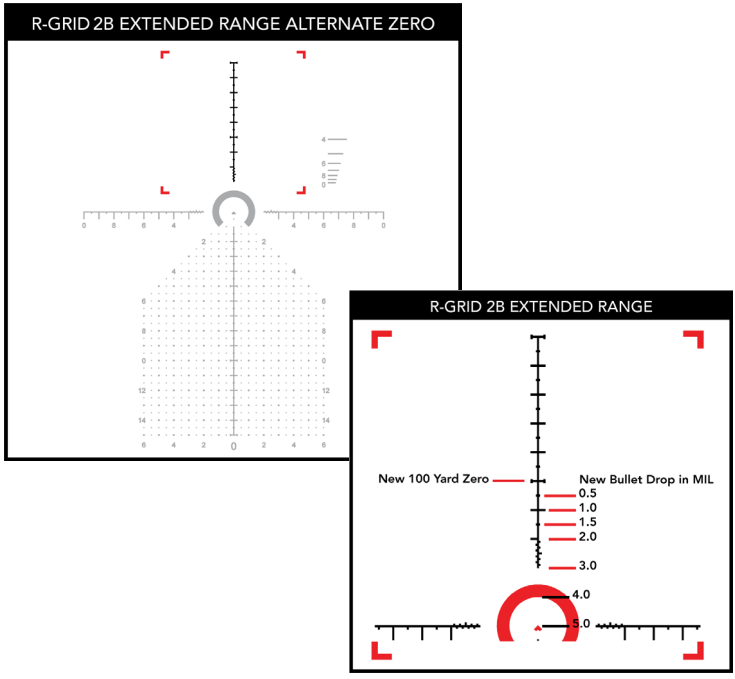
The 4-14x44FFP scope can be used as a traditional optic, where wind calls and range adjustments are “dialed in” using the adjustment knobs at .1 MIL per click, and the chevron tip always used as the point of aim. However, the R-Grid 2B reticle offers a faster method, using the MIL grid as a precise holdover system to quickly adjust your point of aim without manually adjusting the scope at all.

To shoot with high precision at medium to extended range with any caliber, utilize a ballistic calculator program to calculate your bullet’s drop in milliradians as distance to target increases. Phone apps like Strelok Pro or Ballistic AE allow calculations to be run out in the field. The JBM Trajectory calculator is free at http://www.jbmballistics.com/cgi-bin/jbmtraj-5.1.cgi. Shooters will often create a small chart of bullet drop values in MIL to utilize, even attaching the chart to their rifle stock for easy reference. Check the bullet drop chart’s values to apply the correct holdover aiming point for the range to target.

For example, a theoretical target is located at 500 yards distance, with a 10 mph wind blowing left to right. A ballistic calculator estimates that the bullet will drop 3.0 MIL at 500 yards, and drift 1.0 MIL to the right due to wind, as it travels to the target. An ordinary scope would require counting 30 clicks of elevation and 10 clicks of windage to adjust the crosshair’s position physically. Using R-Grid 2B, ignore the adjustment knobs and utilize the MIL grid. Instead of aiming using the center chevron, count 3.0 MIL down to compensate for bullet drop, then hold over 1.0 MIL to the right to compensate for wind. That holdover point, 3.0 MIL down and 1.0 MIL right, becomes the new point of aim and the target can be hit without counting clicks or adjusting the scope at all. In this way the MIL grid may be used like a bullet drop compensating reticle for any caliber. Ballistic calculator programs can also help calculate a custom “zero offset” that helps line up the bullet’s drop with the 0.5 MIL hash marks at longer ranges.

EXTREME LONG DISTANCE SHOOTING WITH R-GRID 2B

To engage targets beyond 15 MIL of bullet drop using R-Grid 2B, employ a ballistic calculator program and use the vertical crosshair hashmarks to your advantage. Abandon using the 100 yard zero at the chevron, and instead dial in a higher zero using one of the 0.5 MIL hash marks on the vertical crosshair. For example, dialing in your rifle using the “barbell” hash mark located 5 MIL above center as your point of aim creates a total 20 MIL of drop available in the reticle. The horizontal crosshairs or MIL grid can still be utilized for wind call holdovers.



SPECIFICATIONS & FEATURES

Magnification: 4-14x	Field of view:
First focal plane	27.2 feet @ 100 yards at 4x
Objective lens diameter: 44 mm	7.9 feet @ 100 yards at 14x
Eye relief: 3.1” – 3.2”	Click value: 0.1 MIL
Ocular lens diameter: 36 mm	Total windage and elevation
Exit pupil: 11.2 mm – 3.3 mm	adjustment: 60 MOA/ 17.45 MIL
Tube diameter: 30 mm	Lens covers included
Partial red reticle illumination	Length (w/o Lens Covers): 13.0”
Fast focus eyepiece	Weight (w/ Battery, w/o Lens Covers):
Waterproof: Meets IP67 standard	25.2 oz.
Fog resistant	6063 aluminum, anodized matte black
Fully multi-coated lenses	Uses one CR2032 battery (included)
Nitrogen purged	3 year warranty

Specifications may vary and are subject to change without notice.

LENS CARE

Please do not use any organic solvent such as alcohol or acetone on your scope. First, blow dust or any foreign objects off of the lens. Then, use a soft cotton or microfiber lens cloth to clean any fingerprints or smears off the lens. Alternatively, you may use a piece of professional lens paper for further cleaning, if necessary.

⚠ WARNINGS: Always ensure your firearm is unloaded (chamber empty and magazine removed) before installing optics or accessories.

⚠ WARNINGS: Improper installation of firearm parts or accessories may result in death or serious personal injury. If you are not properly trained in the installation of these parts, have them installed by a gunsmith or armorer.

REMEMBER: THE FOUR RULES OF FIREARMS SAFETY

Treat every firearm as if it were loaded

Never let your muzzle cover anything you are not willing to destroy

Keep your finger off the trigger until your sights are on target

Be sure of your target and what is behind it

NOTES:

NOTES:

PRIMARY ARMS®

WARRANTY

Your PA4-14x44FFP-R-GRID-2B scope is covered by the Primary Arms warranty for 3 years from time of purchase. If a defect due to materials or workmanship has caused your product to malfunction, Primary Arms will either repair or replace your product. You can find more details at www.primaryarmsoptics.com.

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