



PENTALUX TAC-V SFP
INSTRUCTIONAL MANUAL

PENTALUX TAC-V SFP



CONGRATULATIONS! You have just purchased the advanced Hi-Lux Optics PentLux TAC-V variable rifle scope. Designed for the serious long range tactical

shooter or hunter, the PentLux "Five-Ratio" optical system provides a wider range of power settings... without adding bulk or length. These new compact models feature more precise MOA adjustment, with each click moving bullet impact just

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1/4 MOA. The new TAC-V models also incorporate a powerful illuminated etched glass MOA ranging reticle, with ranging scales and hold-over aiming marks.

The TAC-V rifle scope series is constructed with premium quality lenses, polished to photographic clarity. Fully multi-coated with our proprietary DiamondTuff14 technology, the lenses provide the sharpest and brightest sight picture possible. When you combine the remarkable clarity of the DiamondTuff glass with the convenient Fast Focus Eye Adjustment, you are ensured a crystal clear sight picture. Still, superb clarity and accuracy don't mean a thing if your rifle optics can't withstand the

rugged requirements demanded by today's modern shooter. Hi-Lux is committed to providing today's sportsman or sportswoman with the optical gear that meets such hard use demands.

Here is a riflescope that's built to take on anything that Mother Nature can dish out. With the Hi-Lux Optics PentaLux riflescope, you get Quality, Precision and Ruggedness at a price that doesn't break your budget. If you're looking to take your shooting to the next level, you need one of these scopes on your rifle setup. Your scope is backed by a DIAMONDTUFF LIFETIME WARRANTY.

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SECTION 1

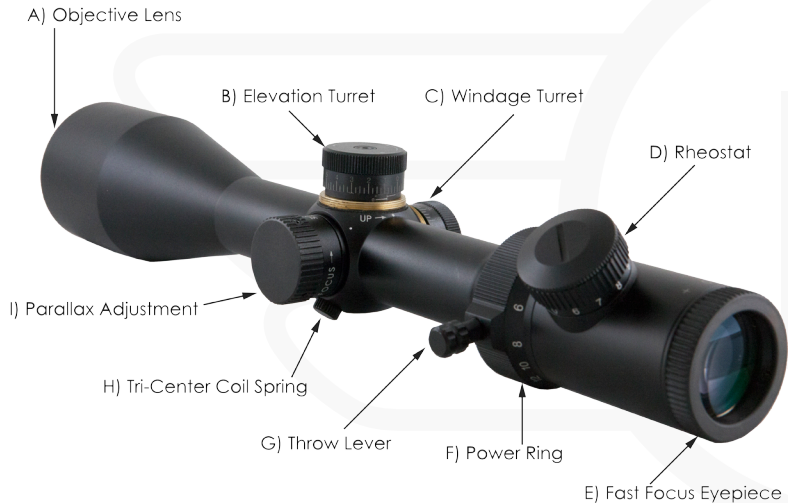
SPECIFICATIONS AND BASIC DEFINITIONS

(1) PENTALUX TAC-V SERIES SPECIFICATIONS :

Model	Power	Obj. (mm)	Tube (mm)	F.O.V.@ 100 Yds (Feet)	Eye Relief (Inch)	Length (Inch)	Weight (O.Z.)	Exit Pupil Range In Variable (mm)	Elevation Total adj. (MOA)	Windage Total adj. (MOA)
TAC-V 2-10X42	2-10x	42	30	49' - 10'	4"	12"	21	18 - 4	90 MOA	90 MOA
TAC-V 4-20X50	4-20X	50	30	26' - 8.9'	4"	14.5"	28	9.6 - 2.44	70 MOA	70 MOA

The PentaLux TAC-V SFP 2-10X42 and 4-20X50 rifle scopes have 1/4 MOA click adjustments for both Elevation and Windage. Each click moves the point of impact 1/4" at 100 yards. One full revolution of the adjustment turret is 20 MOA. The scope comes with flip-open lens covers, and magnification throw lever.

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NOMENCLATURE

A. Objective Lens; **B.** Elevation Turret; **C.** Windage Turret; **D.** Rheostat; **E.** Fast Focus Eyepiece; **F.** Power Ring; **G.** Throw Lever; **H.** Tri-Center Coil Spring; **I.** Parallax Adjustment (only available on TAC-V420X50)

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SECTION 2

ADJUSTING THE DIOPTER AND RHEOSTAT

Hold the scope between three to four inches from your eye and look through the eyepiece in a well lit environment. Aim at a featureless, flat area such as a wall or the open sky. If the reticle is not sharply defined at first glance, turn the Fast Focus eyepiece in or out for adjustment until the reticle appears in sharp focus.

The PentaLux TAC-V is equipped with a red or green illuminated etched glass reticle. The rheostat has 11-positions for varying the brightness of reticle illumination. For best results in a low light situation, we recommend that you set the brightness as low as possible while maintaining clear vision of the reticle. The settings NV1, NV2 and NV3 are compatible for use with night vision optics. The settings 4 to 6 are for low light illumination. The settings 7 to 9 are the intermediate brightness settings. The MAX setting is the brightest setting. The off setting indicates that the illumination has been turned off. The reticle is still visible when the illumination has been turned off.

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The rheostat is positioned to the left of the eyepiece. The battery compartment, located underneath the cap on the rheostat knob, accepts standard CR2032 3V lithium coin batteries. When replacing batteries, place the CR2032 battery with "+" side facing up and retighten the cover.

WARNING: NEVER LOOK DIRECTLY AT THE SUN WITH THIS SCOPE, OR EVEN THE NAKED EYE. YOU COULD PERMANENTLY DAMAGE YOUR EYES.

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SECTION 3

MOUNTING YOUR RIFLE SCOPE

To maximize the accuracy of your rifle, you must first properly mount your riflescope. You should use a high-quality mount with bases designed to fit your particular rifle.

To mount the scope:

- A. The scope should be mounted as low as possible without touching either the barrel or the receiver.
- B. Look through the scope in your normal shooting position. Adjust the scope (either forward or backward) until you find the furthest point forward (to ensure maximum eye relief) that allows you to see a full field of view.
- C. Rotate the scope in the rings until the reticle is perpendicular to the bore. You can also use a level to measure the amount of cant in the reticle. Check to make sure that the elevation turret is on top.
- D. Tighten the mounting screws. We recommend that you tighten the rings to

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no more than **18 INCH LBS** of torque.

WARNING: AVOID OVER-TIGHTENING THE RINGS. THIS CAN DAMAGE THE SCOPE, AFFECTING PERFORMANCE OR RENDERING IT INOPERABLE. THERE SHOULD BE A SLIGHT EVEN GAP BETWEEN THE UPPER AND LOWER HALVES OF THE RINGS. BE SURE THAT THE SCOPE IS MOUNTED FAR ENOUGH FORWARD. ITS REARWARD MOTION MAY INJURE THE SHOOTER WHEN THE RIFLE RECOILS.

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SECTION 4

PRE-ZEROING

Pre-zero sighting can be done either manually, or with a bore-sighting device.

To bore sight manually,

- A. It is necessary to be able to see through the bore from the breech end. In the case of a bolt action, this usually means removing the bolt.
- B. If your scope has parallax adjustment, set it for the range to the target.
- C. Set the variable-power scope to its lowest power.
- D. Look through the bore and center the target in the bore. Adjust the elevation and windage turrets to position the reticle on the center of the target.
- E. Turn the windage turret clockwise to move the point of impact right and counterclockwise to move the point of impact left.
- F. Turn the elevation turret clockwise to lower the point of impact and counterclockwise to raise the point of the impact.

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- G. If you require a large amount of adjustment to align the reticle, we recommend that you make approximately one-half of the windage correction, then approximately one-half of the required elevation correction.
- H. Finish by applying the remaining windage and elevation correction.

If you can't see through the bore then it will be necessary to use some type of bore-sighting device. When using a bore-sighting device, follow the instructions provided with the boresighter.

NOTE: If your mounting system allows for external adjustment, we recommend that you make the majority of windage adjustment externally in the mount. Save the internal scope adjustment for fine tuning your shot placement.



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SECTION 5

ZEROING

This turret has MOA adjustment. Each click is 1/4 MOA. After you zero the scope you can back out the Allen set screws on the elevation and windage turrets to re-index the turret markings to your zero.

The zeroing range will depend on your shooting/hunting conditions.

- A. In general, if most of your shots will be at short range, zero your scope at 100 yards. For long-range shooting at big game, most experienced shooters zero-in at 200 yards.
- B. If the scope has parallax adjustment set it to the range to the target. Set variable-power scopes to the highest power.
- C. From a rested position, fire three rounds at the target.
- D. Observe the center of the points of impact on the target and adjust the windage and elevation screws as needed to bring the point of aim to the desired relationship to the points of impact. The point of impact moves in the direction indicated on the adjustment by the amount indicated.

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- E. Repeat steps C and D as necessary.
- F. Once the zeroing of the rifle is completed, you can reindex the windage and elevation turrets caps to prevent losing your zero.

Each click of the adjustment turret changes the bullet's point of impact at 100 yards by 0.25 in. To calculate the click value at distances other than 100 yards, use the following formula: **(Distance_in_yards)/100yards * adjustment_click_value_at_100yd**. This will give you the actual click value of the scope at that distance.

For Example: Your range is 200 yards. Actual click value at 200 yards = (200 yards)/100 * 0.25in = 0.5in. Thus, the adjustment at 200 yards is 0.5 inch / click. For 400 yards, you would multiply 0.25 inch by 4 and that would give 1 inch per click and so on.

Once the zeroing of the rifle is completed, you can re-index the adjustment turrets to your zero by backing out the allen set screw on the windage and elevation knobs. Next, pull the adjustment off and realign the 0 on the turrets with the adjustment indices. Once you have realigned the 0 on the turrets with the indices, tighten the allen set screw down.

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WARNING: ALL SHOOTING SHOULD BE DONE AT AN APPROVED RANGE, OR SAFE AREA. EYE AND EAR PROTECTION IS RECOMMENDED.

SECTION 6

PARALLAX CORRECTION

The parallax adjustment turret is located on the left side of the scope turblock. It corrects parallax at various user-selected ranges from 25 yards to infinity. To be parallax free, the target must be located at the distance for which the scope is focused. Targets at any other distance will cause parallax. Parallax manifests itself as apparent movement of the reticle against a stationary target.

The parallax adjustment turret is only available on the PentaLux TAC-V 4-20X50 rifle scope.

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SECTION 7

MAINTAINING YOUR RIFLESCOPE

Your scope, though amazingly tough, is a precision instrument that deserves reasonable and cautious care. For normal maintenance:

- A. Do not attempt to disassemble or clean the scope internally.
- B. The external optical surfaces should occasionally be wiped clear with the lens cloth provided or an optical quality lens paper.
- C. Keep the protective lens covers in place when the scope is not in use.
- D. Remove any external dirt or sand with a soft brush so as to avoid scratching the finish.
- E. Wipe the scope with a damp cloth, followed by a dry cloth.
- F. Then go over the metal portions of the scope with a silicon treated cloth in order to protect the scope against corrosion.
- G. Store the scope in a moisture-free environment.
- H. Avoid storing the scope in a hot place, such as the passenger compartments

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of a vehicle on hot days. The high temperatures could adversely affect the lubricants and sealants. A vehicle's trunk, a gun cabinet or a closet are the preferred storage locations.

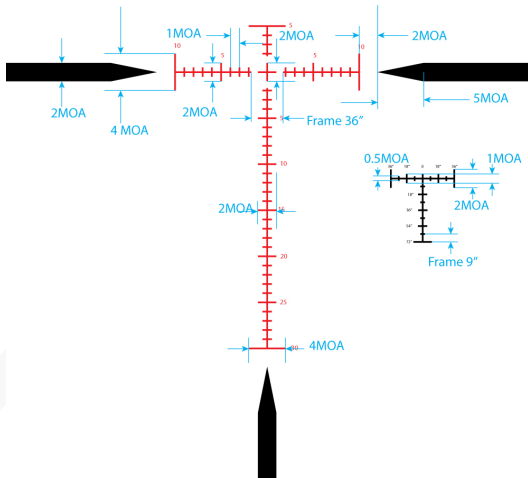
- I. Never leave the scope where direct sunlight can enter either the objective or the eyepiece lens. Damage may result from the concentration of the sun's rays (burning glass effect).

WARNING: UNNECESSARY RUBBING OR USE OF A COARSE CLOTH MAY CAUSE PERMANENT DAMAGE TO LENS COATINGS.

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SECTION 8

THE HR1 Reticle (available on 2-10X)



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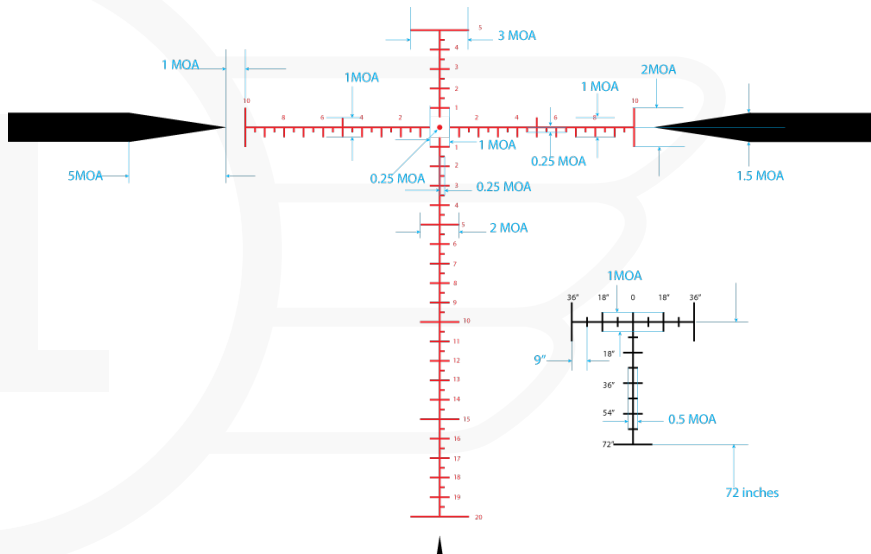
The HR1 Reticle is an MOA reticle with a 2 MOA by 2 MOA crosshair in the center. The HR1 reticle is available in the PentaLux TAC-V 2-10X 42 model in either green or red illumination. The HR1 is a second focal plane reticle and has a true MOA relationship at 10X.

Every tickmark indicates whole MOA subtensions. There are longer tickmarks to indicate every 5th MOA subtension. The ends of the axes are indicated by a 4 MOA tickmark.

There is a known size ranging scale in the lower right quadrant. This scale can be used to range a known sized target out to 1000 yards by framing.

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THE HR2 Reticle (available on 4-20X)



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The HR2 MOA ranging reticle is available in the PentaLux TAC-V 4-20X50 model in either red or green illumination. The HR2 is a second focal plane reticle and has a true MOA relationship at 20X.

The center dot in the reticle is $\frac{1}{4}$ MOA. On the horizontal axis, every half MOA is indicated by a $\frac{1}{4}$ MOA tickmark. The whole MOA subtensions are indicated by the longer $\frac{1}{2}$ MOA tickmarks. There are also numbers to indicate the even numbered whole MOA subtensions on the horizontal axis.

On the vertical axis, the $\frac{1}{2}$ MOA subtensions are indicated by the $\frac{1}{4}$ MOA tickmark. The whole MOA subtensions are indicated by the 1 MOA tickmarks. There are numbers to index every whole MOA subtension on the vertical axis.

There is a known size ranging scale in the lower right quadrant. This scale can be used to range a known sized target out to 1000 yards by framing.

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HOW TO RANGE WITH KNOWN SIZE RANGING SCALE

When you locate your target in your scope's field of view and are within the ranging capacity of the rifle scope, overlay the known size target over its dimensions on the scale. Then, adjust the magnification ring until the size of the object overlain on the ranging scale matches the known size of the target.

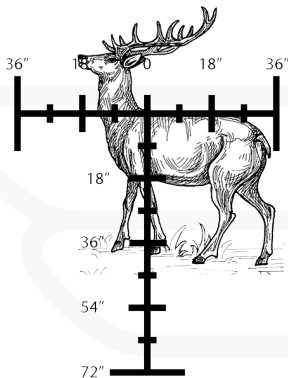
To determine the approximate distance to the target on the TAC-V 2-10X scope, you will need to multiply the power by 100.

To determine the approximate distance to the target on the TAC-V 4-20X scope, you will need to multiply the power by 50.

With some practice, this procedure becomes one fluid motion. Frame, Aim and Shoot! Please see the following ranging examples for reference.

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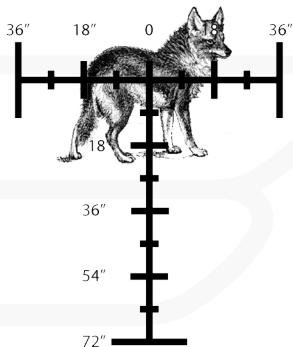
Example 1: You locate an adult buck in your scope, at an unknown distance. You know that the distance from the top of buck's torso to the bottom of the chest cavity, the "kill zone," is about 18". Frame the 18" buck torso between 2 scales on the ranging scale in the reticle, and adjust the magnification until the chest cavity fits.



This example demonstrates how to frame the 18" chest cavity of an average buck using the ranging scale.

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Example 2: You see a coyote at an unknown distance. You locate it with your scope, overlay the approximate 36" length of the coyote within 4 scales of the ranging scale. Adjust magnification until the coyote's length is framed within 4 units of the ranging scale.



This example demonstrates how to frame the length of an average coyote (36") using the ranging scale

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SECTION 9

DIAMONDTUFF LIFETIME WARRANTY

Hi-Lux, Inc. warrants its products against defects arising from faulty workmanship, or materials, for the lifetime of the product. **Normal wear and tear is not covered under this warranty policy.** Any attempt to alter, dismantle or change the standard specifications of the products, will make this warranty null and void.

This warranty is made to the original purchaser of the goods including all international sales, and applies only to the products purchased through our authorized distributors or dealers. The international warranty is subject to approval from our authorized distributor or us directly. The warranty is transferable.

Warranty obligation is limited to the repair or replacement of any product returned to Hi-Lux, Inc. that is determined by the manufacturer to have defects arising from faulty workmanship or materials that adversely affect the satisfactory operation of the product. It should be noted that on items containing an etched glass reticle, that

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the occasional appearance of some small particles is common and not a warrantable repair. **We only have a one-year warranty for the electronic components that are contained in the products.**

Hi-Lux, Inc. reserves the right to request proof of purchase and purchase date. To guarantee warranty service, the enclosed warranty form must be completed and returned within ten (10) days of purchase to establish all warranty rights between you, the original purchaser, and Hi-Lux, Inc.

We assume no liability for any incidental or consequential damages, or incidental expenses. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitations or exclusion may not apply to you. No warranties are made, or are authorized to be made, other than those expressly contained herein.

To file a claim under this warranty, please contact the Customer Service Department of Hi-Lux, Inc. at (310) 257-8142 to obtain a Return Authorization number (RA number). After receiving your RA number, please mark the number on the outside of the package; enclose the defective item with a brief explanation of the problem.

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Please be sure to include your name, address and phone number.

Failure to obtain a RA number may result in either refusal upon delivery, or lengthy delays for warranty repairs and service required for the item returned to us.

All scopes are to be shipped prepaid direct to Hi-Lux, Inc. and must include a check or money order in the amount of \$21 to cover return postage and handling, regardless of purchase date.

Attn.: Warranty & Service Dept.

Hi-Lux, Inc.

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In the event of a non-warranty repair, you will receive an estimate prior to any work being done. This warranty gives you specific legal rights and you may have other rights, which vary from state to state. As defined by federal law, this is a limited warranty.



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