



**TOP ANGLE 7-30X50 MOA**  
**INSTRUCTIONAL MANUAL**

## TOP ANGLE 7-30X50MOA



CONGRATULATIONS! You have just purchased one of our TOP-ANGLE focus series riflescopes; one of the best built. The needs of left handed shooters are neglected in today's optical market. Typically, adjusting parallax forces left handed shooters to remove their dominant hand off the trigger to adjust the side parallax knob on the left. Where as a right handed shooter would not have any

problem using his or her left hand, adjusting left side parallax is not ergonomic for left-handed shooters. The TOP-ANGLE Series is our solution to this dilemma; by placing the parallax adjustment at a 45 degree angle from the vertical, left and right hand dominant shooters can ambidextrously adjust parallax using their off hand.

No corners have been cut in the production

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of these scopes. All glass lenses are meticulously polished to photographic quality for exceptional clarity and light gathering capability, which is especially critical during the low light hunting conditions of daybreak and dusk.

All models in this series feature:

- A. **DiamondTuff fully multi-coated** 50mm lenses
- B. **Fast Focus Eye Adjustment** with a large diameter ocular lens
- C. **Tri-Center spring tension** for positive contact dial turns and precise adjustments
- D. Proprietary **Top-Angle Parallax Adjustment** (US Patent # 7626760)
- E. **PermaCoat** soft luster, black finish

F. Rugged All Terrain Rifle Scope (ATR) design: **Waterproof – Fogproof – Shockproof - Recoilproof**

Clarity and accuracy don't mean a thing if your optics can't keep up with the rugged requirements demanded by the modern shooter. Leatherwood/Hi-Lux is committed to providing today's shooter with the optical gear that meets these demands. Hi-Lux Optics ATR Top-Angle Series scopes are manufactured with the All Terrain Rifle Scope (ATR) design which leverages the latest scope manufacturing technology for Clarity, Accuracy AND Durability.

Here is a rifle scope that's built to take on anything that Mother Nature can dish out. You can pay more, a lot more, but why?

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# RIFLESCOPE MANUAL

## SECTION 1

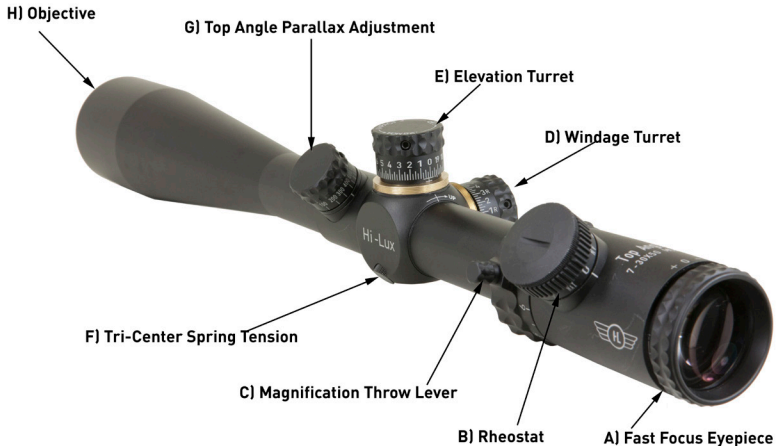
### SPECIFICATIONS AND BASIC DEFINITIONS

(1) SPECIFICATIONS:

<b>Model</b>	<b>Power</b>	<b>Obj. (mm)</b>	<b>F.O.V.@ 100 Yds (Feet)</b>	<b>Eye Relief (Inch)</b>	<b>Length (Inch)</b>	<b>Weight (O.Z.)</b>	<b>Exit Pupil Range In Variable (mm)</b>	<b>Tube (mm)</b>
TP7-30X50 MOA	7-30X	50	10.6' - 3.5'	4"	10"	23	16.6 - 3.2	30mm

All the air-glass surfaces are fully multi-coated using the special technology to maximize the light transmission. The click adjustments for both Elevation and Windage are  $\frac{1}{4}$  MOA.

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## (2) BASIC DEFINITIONS:

A) Fast Focus Eyepiece; B) Rheostat; C) Magnification Throw Lever; D) Windage Turret; E) Elevation Turret; F) Tri-Center Spring Tension; G) Top Angle Parallax Focus; H) Objective

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## SECTION 2

### ADJUSTING THE FAST FOCUS EYEPIECE AND RHEOSTAT

Hold the scope about three to four inches from your eye and look through the eyepiece at a featureless, well lit area at least 10m away such as a wall or open sky. If the reticle is not sharply defined, you need to turn the fast focus (4) in or out until the reticle appears in sharp focus.

The rheostat has 10 brightness settings for illuminating the reticle. For the best results in low light situations, we recommend that you set the brightness as low as possible



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while you are still able to see the reticle clearly. The NV setting is designed for use with digital night vision optics. Brightness settings 2 to 4 are for low light illumination. The settings 5 to 9 are the intermediate brightness settings that can give you more choices to choose during low light scenarios. The Max position is the brightest illumination setting. There are two "Off" positions on the rheostat for easy access. The rheostat is located 45 degrees left of the eyepiece. The battery, which is included with the scope, is a 3V lithium coin CR2032 battery. The battery can be changed by first removing the battery compartment cover (1) located at top of the rheostat. Replace the old battery with a new CR2032 battery with "+" side facing up and retighten the cover (1).

## SECTION 3

### MOUNTING YOUR RIFLESCOPE

To achieve the best accuracy from your rifle, the scope must be mounted properly. You should use a high-quality mount with bases designed to fit your particular rifle.



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To mount the scope:

- A. The scope should be mounted as low as possible without touching either the barrel or the receiver.
- B. Prior to tightening your scope rings, look through the scope in your normal shooting position. Adjust the scope (either forward or backward) until you find the farthest 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 pattern is perpendicular to the bore and the elevation turret is on top.
- D. Tighten the mounting screws.

**WARNING: AVOID OVER-TIGHTENING THE RINGS. WE RECOMMEND TIGHTENING SCOPE RINGS TO NO MORE THAN 20 INCH LBS OF TORQUE. OVER TIGHTENING THE RINGS WILL DAMAGE THE SCOPE, AFFECTING PERFORMANCE OR RENDERING IT INOPERABLE. THERE SHOULD BE A SLIGHT EVEN GAP BETWEEN THE SHOULDERS OF THE RING HALVES. 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

### HOW TO RESET THE SCOPE TO OPTICAL CENTER

The elevation and windage adjustments on the Hi-Lux TP 7-30X50 MOA are preset to the optical/mechanical center at the factory. For all new scopes, you do not need to reset the erector unit to optical/mechanical center for the scope. However, if you are mounting a scope that was previously zeroed on another rifle, you should reset the scope's internal adjustment prior to zeroing on the new rifle. Centering the Elevation and Windage adjustments to optical center will maximize the total range of internal adjustment. If the erector unit inside the scope is not centered, the Elevation and Windage adjustments will not give equal travel in all directions. To regain the full adjustment range, you need to recenter the adjustments as following:

- (1) First loosen the set screws on the elevation and windage turrets.
- (2) Turn the Windage adjustment all the way counter-clockwise until the turret stops turning. **DO NOT FORCE ANY CLICKS!**

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- (3) Turn the Elevation adjustment all the way counter-clockwise until the turret stops turning. **DO NOT FORCE ANY CLICKS**
- (4) Turn the Windage adjustment all the way back clockwise until you cannot turn the turret anymore. Count the total number of clicks while you are turning the adjustment turret. Remember the total number of clicks.
- (5) Adjust the Windage turret to the Left with half the amount of the clicks counted in the previous step. Now the Windage adjustment is at optical center.
- (6) Repeat the steps (3) and (4) to reset Elevation to optical and physical center.
- (7) Now the scope is in optical center. At optical center, there is about 120 MOA (60 MOA each direction) of total adjustment for elevation and windage.

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## SECTION 5

### BORESIGHTING YOUR RIFLESCOPE

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 distance to the target.
- C. Set the variable-power scope to low power.
- D. With the firearm in a rested position, remove the caps from the windage and elevation screws.
- E. Look through the bore and center the target in the bore and adjust the windage and elevation screws to position the reticle on the center of the target.
- F. To adjust windage, turn the windage adjustment turret clockwise to move the point of impact right and counterclockwise to move the point of impact left.
- G. In the same manner, adjust the elevation by turning the elevation

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adjustment screw clockwise to lower the point of impact and counterclockwise to raise the point of the impact. \*\*If a large amount of adjustment is required to align the reticle, 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 adjustment.

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 device.

OPTIONAL: If your mounting system allows for adjustment of the scope, the gross adjustments should be made in the mount and then the final adjustments made with the scope's internal adjustment system.

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

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## SECTION 6

### ZEROING YOUR TOP ANGLE 7-30X50 MOA

**WARNING: IF A BORE SIGHTING COLLIMATOR OR ANY OTHER BORE OBSTRUCTING DEVICE WAS USED; IT MUST BE REMOVED BEFORE PROCEEDING. ANY OBSTRUCTION CAN CAUSE SERIOUS DAMAGE TO THE GUN AND PERSONAL INJURY TO YOU AND OTHERS NEARBY.**

The zero range will depend on your shooting needs and range conditions.

- A. In general, if most of your shots will be at close distances, zero-in the center dot of the TP730X50 MOA reticle at 100 yards. For long range target shooting or big game hunting, most experienced shooters zero-in about three inches high at 100 yards.
- B. Adjust the parallax setting to the distance you are zeroing at. From a rested position, fire three rounds at the target.
- C. Observe the points of impact on the target and adjust the Windage and Elevation screws as needed to bring your point of aim to the desired point of impact. The point of impact moves in the direction indicated on the adjustment

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turrets and by 1/4 MOA/click.

- D. Repeat as necessary.
- E. Once the zeroing of the scope is completed, you need to put both windage and elevation caps back on the turret to prevent unintentional adjustment.

Each click of the adjustment changes bullet impact at 100 yards by the amount indicated on the windage and elevation adjustments. The adjustments are calibrated in Minutes of Angle (MOA). One minute of angle is very close to 1 inch at 100 yards. To calculate the click value at distances other than 100 yards, use the following formula: divide the distance (number of yards) by 100. Then multiply this number by the click value stated on the windage and elevation adjustments. This will tell you the actual click value of the scope at that distance.

For Example: your range is 200 yards. Divide 200 by 100 and that equals 2. Multiply the 1/4 minute indicated on the adjustments by 2 and the adjustment at 200 yards is 1/2 inch per click. At 400 yards, you would multiply 1/4 by 4 and that would give 1 inch per click and so on.

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

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## SECTION 7

### MAGNIFICATION THROW LEVER

The TOP-ANGLE 7-30X50 MOA magnification throw lever allows the shooter to quickly and easily change magnification settings.

As the scope is in the second focal plane, the operator can take advantage of the range finding capabilities of the scope. Simply frame a known sized target on the ranging scale and read the second set of numbers on the magnification ring.

## SECTION 8

### TOP ANGLE PARALLAX ADJUSTMENT

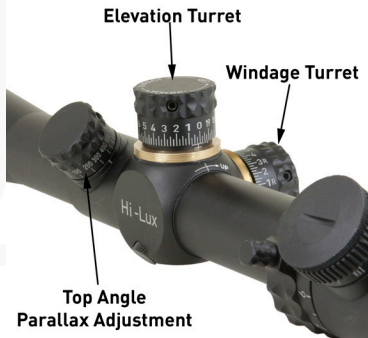
The TOP-ANGLE parallax adjustment allows for parallax correction at various user-select ranges from 75 yards up to infinity. To be parallax free, the target must be



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located at the distance for which the scope is focused.

If the parallax setting is for any other distance, there will be parallax. Parallax manifests itself as apparent movement of the reticle against the stationary target. Leatherwood/Hi-Lux proprietary Top-Angle Parallax Adjustment is easily accessible to either hand.



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### CAUTION:

THE LOCATION OF THE TOP-ANGLE PARALLAX ADJUSTMENT KNOB IS 45 DEGREES LEFT OF THE VERTICAL IN RELATIONSHIP TO THE ELEVATION TURRET. SEE PICTURE ON PAGE 16.

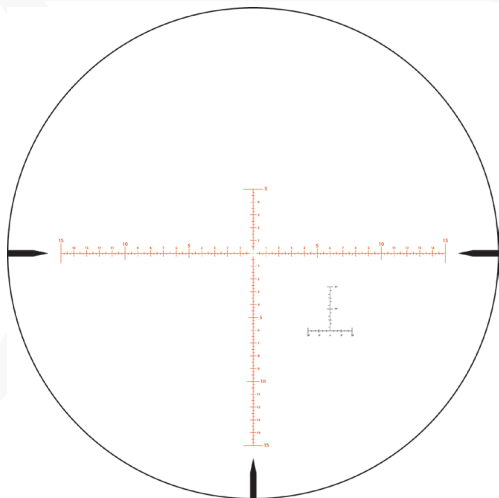
THE TOP-ANGLE PARALLAX FOCUS IS A PRECISION ADJUSTMENT FOR PARALLAX. ALWAYS AVOID HITTING THE TURRET WITH A HEAVY OBJECT, OR BUMPING IT AGAINST ANYTHING SOLID.

WHEN TRANSPORTING YOUR RIFLE WITH THE SCOPE MOUNTED, LAY THE RIFLE OR THE GUN CASE CONTAINING THE RIFLE, SO THE TOP-ANGLE FOCUS TURRET FACES UPWARD AND DOES NOT BUMP AGAINST ANYTHING SOLID, SUCH AS THE FLOORING OF YOUR VEHICLE TRUNK. NEVER LAY THE RIFLE WITH THE TOP-ANGLE FOCUS TURRET FACING DOWNWARDS, OR THIS MAY RESULT IN DAMAGE TO PARALLAX ADJUSTMENT MECHANISM.

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## SECTION 9

### TOP ANGLE 7-30X50 MOA RETICLE



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The new Top Angle 7-30X50mm MOA scope features a new MOA reticle for precision shooting. The Center features a 1/16 MOA dot. The center opening measures ½ MOA by ½ MOA. Both the horizontal and vertical axes indicate quarter MOA subtensions.

The TP730X50 MOA reticle has a true MOA relationship at 28X. At 14X, the value of each reticle subtension is doubled.

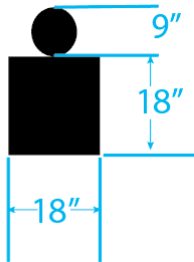
For example, the 1 MOA marking will be equivalent to 2 MOA of holdover at 14X, the 5 MOA marking will be equivalent to 10 MOA of holdover at 14X.

At 7X, the value of each reticle subtension is quadrupled. Therefore, the 1/4 MOA mark will be equivalent to 1MOA of actual holdover. Similarly, the 5 MOA marking will actually equal 20 MOA of holdover at 7X.

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## How to range using the Ranging Scale

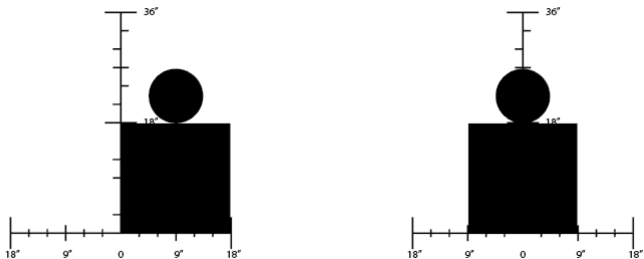
Suppose we are shooting at a steel silhouette target that measures roughly 18" wide and 18" m tall with a 9" head.



The Top Angle Scope series takes advantage of the second focal plane reticle for range finding purposes. By using the scale provided in the lower right quadrant, adjust the magnification ring until the target subtends its real size on the ranging scale.

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For example, here is the steel silhouette properly framed on the ranging scale:



Both of these targets are properly framed in the ranging scale. Notice how the width of the silhouette roughly measures 18" and the total height of the silhouette measures 27". If the target you are trying to frame is too small, increase the magnification. If the target you are trying to frame is too large on the scale, reduce the magnification.

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To determine the approximate range to the target, read the second set of numbers below the magnification ring. This number will be the approximate distance to the target in yards.

## SECTION 10

### 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 with the microfiber lens cloth provided or an optical quality lens wipe.
- 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.

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- 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 compartment 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 is 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 11

### DIAMONDTUFF GUARANTEE

Hi-Lux, Inc. warrants its products against defects arising from faulty workmanship or materials, for the lifetime of the product. Normal wear and tear, accidental or intentional misuse, and theft are not covered under this warranty policy. After one year, optical components may need to be serviced as part of general optic care. Such services are not warrantable. 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, and applies only to the products purchased in the United States. 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, the occasional appearance of some small particles is common and not a warrantable

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repair. Hi-Lux provides a two-year warranty for the electronic components that are contained on the products.

Hi-Lux, Inc. reserves the right to request proof of purchase and purchase date. Hi Lux assumes no liability for any incidental or consequential damages, theft, 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. 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. 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 returns are to be shipped prepaid direct to Hi-Lux, Inc. including a check or

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money order in the amount of \$21 to cover postage and handling. Additional fees will be applied to all returns from outside the continental United States.

Attn.: Warranty & Service Dept.

Hi-Lux, Inc.

3135 Kashiwa Street

Torrance, CA 90505

Tel: (310) 257-8142, Fax: (310) 257-8096

E-Mail: [techservice@hi-luxoptics.com](mailto:techservice@hi-luxoptics.com)

[www.hi-luxoptics.com](http://www.hi-luxoptics.com)

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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