



## Hi-Lux Optics



## M40 3-9X40 MK2 RIFLESCOPE INSTRUCTIONS

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In 1965, the U.S. Marine Corps set out to find a new rifle and scope combination as their official combat sniper rifle. The goal was to have USMC armorers modify and fine-tune a readily available production rifle. The Corps chose the Remington Model 40x, an upgraded version of the Model 700, chambered in .308 Winchester (also known as 7.62 NATO), and paired it with a commercially available 3-9x40mm variable-power hunting scope with a simple, easy-to-learn ranging system. This rifle was designated as the M40.

Today, Hi-Lux Optics has recreated this 1960s-era USMC scope for "old school" sharpshooters who take the time to master the trajectory of their loads. While faithful to the original design, Hi-Lux has made significant internal improvements, including superior optics with fully multi-coated lenses for maximum light transmission and precise 1/4" click adjustments with stainless steel detents and internal components on the windage and elevation turrets.

The scope's Accu-Range Rangefinder system features two parallel horizontal lines near the top of the reticle and a ranging scale in yards located in the bottom right quadrant. The scale is an etched glass reticle in the first focal plane. To range, the shooter zooms in on a known target size of 18 inches until it fits between the two upper lines, then reads the range at the bottom. The Accu-Range reticle can range targets from 200 to 600 yards.

Hi-Lux has introduced an upgraded version of this scope—the M40 3-9X40 MK2, which features enhanced stainless steel internals in the adjustment turret mechanisms. This design ensures greater reliability, particularly during frequent turret adjustments.

As with all Hi-Lux scopes, the lenses are fully multi-coated with DIAMONDTUFF14 and polished to photographic quality, maximizing clarity and light transmission. Built to endure the harshest conditions, the M40 series delivers quality, precision and durability. Designed to meet the diverse needs of all shooters, the M40 scope line is a versatile choice for various shooting applications.

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## SECTION 1: SPECIFICATIONS AND BASIC DEFINITIONS

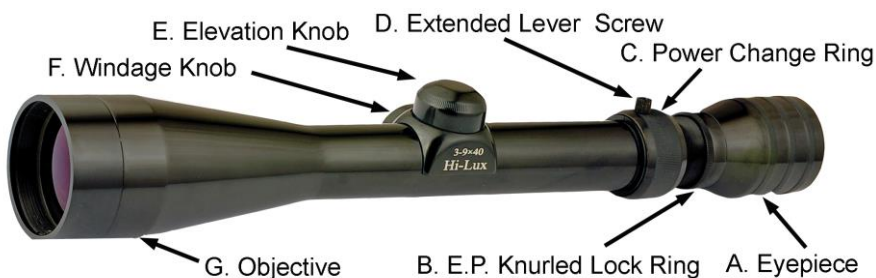
### (1) SPECIFICATIONS:

Model	Power	Obj. (mm)	F.O.V.@ 100 Yds (Ft)	Eye Relief (In)	Length (In)	Weight (O.Z.)	Exit Pupil Range In Variable (mm)	Tube (In)
M4039X40MK2	3X-9X	40	37.7-12.6	3.25	10.5	16.2	13.3 - 4.4	1

All air-glass surfaces are fully multi-coated to maximize the light transmission. The **Elevation** and **Windage** click adjustment is 1/4 MOA at 100 yards  $\approx$  1/4 inch at 100 yards  $\approx$  7mm at 100 meters. A special ranging reticle is used in these two models. The details of the reticles are illustrated in the Section 8.

The M40 3-9X40 rifle scopes have a total of 80 MOA of internal adjustment.

### (2) BASIC DEFINITIONS:



**A.** Eyepiece; **B.** EP Knurled Lock Ring; **C.** Magnification Ring; **D.** Extended Lever Screw; **E.** Elevation Knob; **F.** Windage Knob; **G.** Objective.

## SECTION 2: EYEPiece FOCUSING

Hold the scope approximately three inches from your eye and look through the eyepiece at a featureless, evenly lit area, such as a wall or open sky. If the reticle does not immediately appear sharply defined, adjust the Eyepiece (A) by turning it in or out until the reticle is in sharp focus. Once the reticle is clear, tighten the

knurled Eyepiece Lock Ring (B) until it rests securely against the backside of the eyepiece, ensuring the diopter setting and reticle focus remain stable. If further adjustment is needed, turn the Eyepiece (A) counterclockwise or the Eyepiece Lock Ring (B) clockwise.

## **SECTION 3: ELEVATION AND WINDAGE TURRETS**

This upgraded version of the M40 3-9X40 features stainless steel internals in the turrets. Each click on the elevation and windage turrets provides a precise  $\frac{1}{4}$  MOA adjustment.

You can use your fingers or a coin to adjust the turrets. For elevation, turning the turret counterclockwise raises the point of impact, while turning it clockwise lowers the point of impact. For windage, turning the turret counterclockwise moves the point of impact to the right, and clockwise moves it to the left. Once adjustments are complete, you can reset the elevation or windage marking ring to zero by aligning the open gap's center with the turret's zero tick mark.

## **SECTION 4: MOUNTING**

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. To mount the scope:

- A. The scope should be mounted as low as possible without touching either the barrel or the receiver.
- B. Before tightening the mount rings, look through the scope using 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 is plumb and the elevation turret is on top.
- D. Tighten the ring screws to 15 in lbs.

**WARNING:** AVOID OVER-TIGHTENING THE RINGS, AS THIS CAN DAMAGE THE SCOPE, POTENTIALLY AFFECTING ITS PERFORMANCE OR RENDERING IT INOPERABLE. WE RECOMMEND A TORQUE SETTING OF 15 IN LBS.

## SECTION 5: 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. Set the variable-power scope to low power.
- C. To eliminate as much human error as possible, we recommend using a gun vise or sand bags to stabilize the firearm while boresighting.
- D. Look through the bore and center the target in the bore. Adjust the **Windage** and **Elevation** turrets to position the reticle on the center of the target.
- E. For the **Windage** adjustment, turn the **Windage** adjustment turret **Clockwise** to move the point of impact **Left** and **Counterclockwise** to move the point of impact **Right** as the arrow on the turret indicates.
- F. In the same manner, adjust the **Elevation** by turning the **Elevation** adjustment turret **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.*
- G. Finish by applying the balance of **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 device.

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

## SECTION 6: ZEROING

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

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

- A. In general, if most of your shots will be at short range, we recommend that you zero at 100 yards. Some other applications such as CMP Vintage Sniper may call for a 300 yard zero.
- B. Set the power to 9X and remove both **Elevation** and **Windage** caps.
- C. From a rested position, fire three rounds at the target.
- D. Observe the center of the previous group fired and adjust the **Windage** and **Elevation** turrets 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 turrets and by the amount indicated.
- E. Repeat as necessary.
- F. Once you have finished zeroing, you can re-index the mark ring by lining up the arrow on the turret with the "0" on the mark ring. Put the turret covers on to prevent accidental adjustment.

Each click of the adjustment turret moves the bullet impact at 100 yards by  $\frac{1}{4}$  MOA. 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 (yardage) 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  $\frac{1}{4}$  - the "click value" indicated on the adjustment turrets by 2 and the adjustment at 200 yards is  $\frac{1}{2}$  inch per click.

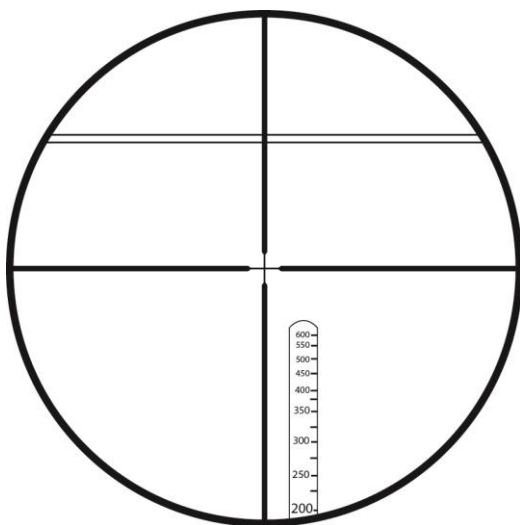
For 400 yards, you would multiply  $\frac{1}{4}$  - the "click value" by 4 and that would give 1 inch per click at 400 yards and so forth. Once the zeroing of the scope is completed, you can reset the zero marking per the instruction.

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



## SECTION 7: M40 RANGING RETICLE

### 1. M40 3-9X40 MK-2 Reticle:



The M40 3-9x40 MK2 rifle scope employs the Accu-Range rangefinding reticle system. The Accu-Range Rangefinding reticle features two parallel horizontal crosshairs at the top of the reticle and a yardage-ranging "tombstone" at the bottom. This yardage scale is a separate, etched glass reticle located in the first focal plane.

To determine range, the shooter simply zooms in on a known 18-inch target until it fits precisely between the two horizontal lines, then reads the range from the scale at the bottom of the sight picture. This reticle accurately ranges from 200 to 600 yards.

Steps to use:

1. Frame a known 18-inch target between the two parallel horizontal lines.
2. Read the range distance where the ranging scale meets the edge of the sight picture to determine the approximate distance to the target. The range capacity spans from 200 to 600 yards.

## SECTION 8: 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 dry, moisture-free environment.
- H. Avoid storing the scope in a hot place, such as the passenger compartments 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.**

## SECTION 9: DIAMONDTUFF LIFETIME WARRANTY

**Hi-Lux, Inc.** warrants its products against defects arising from faulty workmanship, or materials, for the lifetime of the **original purchaser**. 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.**, which 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 the occasional appearance of some small particles is common and not a warrantable repair.

We have 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.

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. 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 money order in

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the amount of \$21 to cover postage and handling regardless of purchase date. Additional fees will be applied to all returns from outside of the United States.

**Warranty & Service Dept.**

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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.