



**MLTC**

**OPTICS**

**PRO SERIES**

**USERS MANUAL**

edition 2

VIPER PRO • VIPER PRO TACTICAL • MAMBA PRO 2 • MAMBALITE

# FORWARD

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Congratulations on buying this Pro Series Rifle scope.

10 years ago we started a company to provide optics designed by shooters for shooters, with the back up that we as shooters would want. We wanted to innovate, to reduce costs, to improve quality.

We think we have succeeded. Welcome to the MTC family.

**Gary Cooper**  
Founder - MTC Optics



Your new scope is manufactured with the following features:

Super bright edge to edge multi-coated optics for a new standard of light transfer

Magnetic, rotating flip-up lens covers

Magnifying lens in rear cover for head-up display of turret markings

Side parallax – 10m to infinity

x6 times scopes to extend magnification range without sacrificing optical performance

### **Viper Pro**

Range 'window' on elevation turret

Smart turret design with 3:1 ratio rotation

Customisable range display window

Lock, click and free turn setting for elevation turret



All MTC scopes are manufactured to exacting quality standards, bringing you the highest quality lenses that we can buy. The Pro Series has been exclusively manufactured to our own specification, and is designed to be the ultimate long range target scope.

# CARE AND MAINTENANCE

Your new MTC scope is a precision optical instrument, and while designed to cope with the rigours of shooting on any calibre rifle, normal care must be taken, particularly of the optical surfaces.

Clean the outer casing with a damp and soft cloth and then dry. Close the lens protective cover at all times when the scope is not in use to protect the lenses. First lens cleaning should always be with an optical puffer followed by a clean soft brush. When necessary clean the lenses **ONLY** with a lens cleaning cloth and lens cleaning fluid suitable for photographic equipment. If you clean the lenses with an abrasive cloth such as a tissue, or have any dirt in the cloth, then your scope could well be damaged beyond repair. Store the scope in dry, well-ventilated place.

# ZEROING YOUR RIFLE

On Mamba Pro 2/MambaLite - remove the turret covers and store in a safe place.<sup>1</sup> On Viper Pro unlock turret locks.<sup>2</sup> On Viper Pro Tactical unlock turret using bottom turret lock (indicated).<sup>3</sup>

Place a suitable target at 15 yards (50 yards if you have a good boresighter), ensuring a suitable backstop.

Ensure the rifle is held steadily and take 1 shot. Observe the bullet strike. Use the Elevation Turret to move the point of impact UP (anti-clockwise) or DOWN (clockwise) and then the Windage Turret RIGHT (anti-clockwise) or LEFT (clockwise). When point of impact is in the centre of the target this can then be repeated at progressively further ranges until the chosen zero range is reached. Adjustment is  $\frac{1}{4}$  MOA, that is one click move the point of impact  $\frac{1}{4}$  inch at 100 yards.

When the rifle is almost zeroed start to fire groups of 5 shots before making small adjustments. Remember that wind will affect the bullet flight so zeroing should be carried out in calm conditions. When you are happy that your rifle is zeroed correctly re-fit the turret covers (Mamba Pro 2) or lock the turrets (Viper Pro).



# ACCESSORIES

The scope is supplied with magnetic flip-up covers that can be moved to 4 positions as well as doubling up as a sunshade. Covers can be removed by unscrewing of the scope tube or can be adjusted to different positions and re-locked using the knurled locking ring. **Caution: on recoiling rifles do not leave the rear flip up at 90 degrees as it could move and cause injury.**

Viper Pro set the rear flip vertically to use the magnifying lens to view the turret markings.

Mamba Pro 2 set the rear flip horizontally to use the magnifying lens to view the parallax markings.



## SCB2 Reticle (MIL)

SCB2 stands for Small Calibre Ballistic Reticle (type 2) but really it is suitable for all types of firearms but is especially appropriate for long range weapons as well as giving the detailed information demanded by target shooters.

The SCB2 is spaced using milliradian (mil) and is set to use the international Mil standard of 3.6 inches at 100 yards. The reticle is 'true' at 10 magnification.

Additionally a half Mil aiming point is added for exact shot placement.

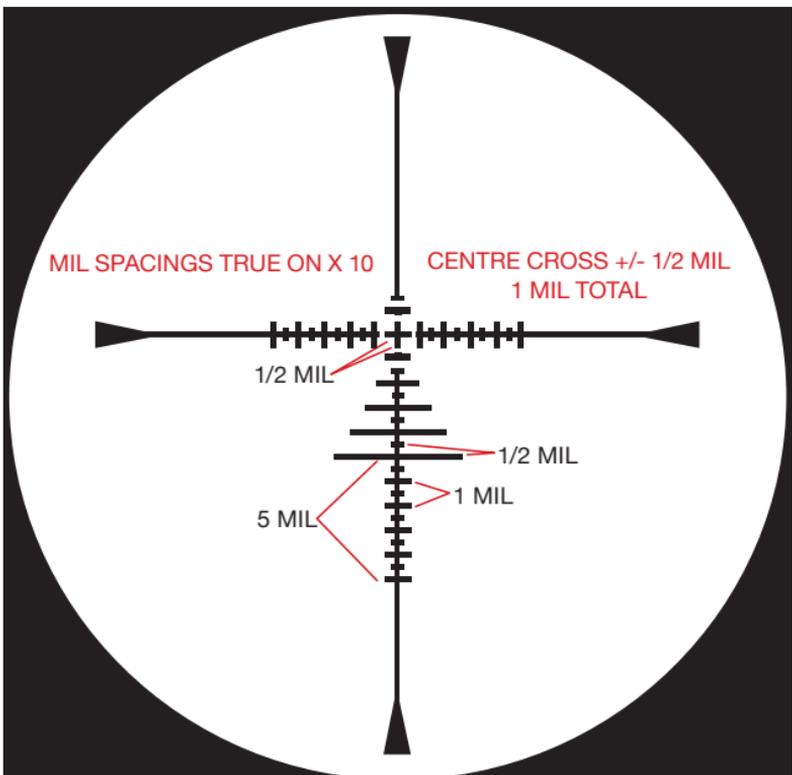


Figure 1: SCB2 reticle

# OPERATION OF THE SCOPE

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## **Mounting the scope:**

The scope must be mounted using good quality 25mm (MambaLite) or 30mm diameter rings. **These rings should not be over-tightened or damage may result.** When selecting rings, please ensure that they are high enough to allow the scope objective lens to clear the rifle, but not so high as to raise the eyepiece so making sighting difficult. Please do not use poor quality mounts as they will cause misalignment and inaccuracy, MTC recommend *Blueprint* or *Sportsmatch* mounts. We advise scope mounting using the following steps:

1. Attach the mounts to the rifle action where you estimate the optimum placement. Fasten securely.
2. Split the mounts and place the scope on the lower half, attach the top half securely but with enough slack to allow the scope to slide with gentle pressure.
3. Move the scope backward and forwards to see a clear sight picture, with no black circle around the outside.
4. Rotate the scope until the reticule is vertical, use a vertical edge or plumb line to assist you. This is a dark art, and requires experience. We recommend that if necessary you get a second opinion off an experienced shooter. If your scope is oriented incorrectly you will shoot sideways when not on the point of zero.
5. Tighten the scope. Do this holding the SMALL edge of the 1.5mm Allen key, if you hold the large side you will over-torque the bolts and your scope will suffer. The mounts should show a crack between top and bottom equal on both side.
6. When you are happy that the scope is mounted perfectly tighten each Allen bolt 1/8th of a turn using the long edge.

## **Shimming**

It is quite common when sighting in many types of rifle and especially an airgun which have a lot of pellet drop, to need to tilt the scope forward by shimming the rear mount by up to .3 mm. A good material to use for this purpose is 35mm film negative or lead tape (used to weight golf clubs). Simply cut the shim to the same size as the mount and place it between the scope and the base of the rearmost mount.

## **Diopter adjustment**

This obtains the sharpest Reticule image, and **MUST** be carried out first. This adjustment only needs to be carried out once and is unique to each user's eye. Rotate fast focus ring to get the sharpest possible reticule. Hint: Don't look at the Reticule for more than a few seconds at a time as your eye will compensate for less than perfect sharpness. Look away and look back again. Repeat until as sharp as possible.

## **Focusing / Parallax adjustment**

The range for which the picture is in focus is called depth of field. This decreases with magnification but increases with range. The centre of this focus is called the parallax setting. For example, on x10 with a parallax setting of 26 metres the scope will be in focus from about 14m to 35m, a depth of field of 21m. Focus the sight on the target using the side focusing ring. This is also called parallax adjustment. Never try to zero without a perfectly clear picture as aiming errors will occur due to parallax error.

# OPERATION OF THE SCOPE (CONTINUED)

## Side wheel

A optional 3 inch side wheel is offered on the Pro Series. To fit, loosen the three 2mm locking screws in the inner ring of the wheel, align the existing parallax numbers with the numbers printed on the wheel and slide over the parallax wheel. Carefully tighten the three locking screws – Do not overtighten.



Note: numbers are intended as a guide only and exact range will vary depending on the scope magnification and your eyesight in relation to the eyepiece focusing ring.



## Windage & elevation turret operation

Access to the adjustment is gained by removing the covering caps on the Mamba Pro 2/MambaLite and by unlocking the target turrets on the Viper Pro/ Viper Pro Tactical. The adjusters are finger adjustable.

The bullet strike is marked with up/ down (top turret) and left/ right (side turret), i.e. if you want the bullet to go higher, turn anti-clockwise. Replace the turret caps on Mamba Pro 2/ MambaLite, secure the turrets using the turret lock lever on Viper Pro or lock the turret ring on the Viper Pro Tactical. The Viper Pro Tactical turret has a locking ring at the base of the turret.<sup>1</sup>



## Sunshade

A screw-on sunshade is available for most Viper and Mamba Pro models.

## Illumination

The centre part of the reticle can be illuminated to help with accurate target acquisition. Just the centre part is illuminated so as to avoid 'washing out' the lenses inside the scope with too much light.

The illuminated reticle is turned on by a long press of the centre button located in the middle of the parallax adjusting knob. The light intensity adjusts in six stages. A long press switches the illumination off. Switching the illumination back on again will restore the previous light intensity setting.

The battery can be changed by unscrewing the outer knurled cover on the parallax assembly. Battery type is a CR2032. At night your pupils are open and it is not recommended to use the illuminated reticle (IR) on high settings, these are for daylight shooting in shadow. As the light falls you should turn down the illumination, using the minimum necessary.

## Mamba Pro 2 turrets<sup>1</sup>

After zeroing the Mamba Pro 2 turret ring can be realigned for reference.



## Viper Pro turrets<sup>2</sup>

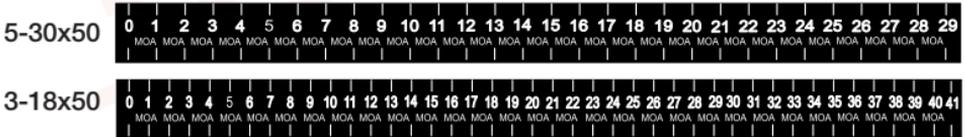
After zeroing, the printed numbers on the turrets can be realigned: loosen the three 1.5mm Allen key screws that are positioned at 120 degrees, lift and turn the turret to re-align the 0 marking with the arrow mark - replace the three Allen screws.

The elevation (top) turret also features a range window behind which a range tape can be applied once the top turret screws and turret are removed.



## Range Tape (Viper Pro)

A range tape measuring 90x7mm can be affixed to the elevation drum after its removal



To design your own range tape, see a video of the scope in action or to just find out more, log on to [mtcoptics.com/range-tape-calculator](http://mtcoptics.com/range-tape-calculator)



**E-mail:**  
**Website:**

[support@mtcoptics.com](mailto:support@mtcoptics.com)  
[www.mtcoptics.com](http://www.mtcoptics.com)

# GUARANTEE REGISTRATION

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**Please note:** This scope has a standard guarantee for 1 year from date of purchase. However this is increased to 5 years to the original purchaser subject to it being registered with MTC Optics within 30 days of original purchase, either by posting the information listed below to MTC Optics, by e-mail or via the website [mtcoptics.com/warranty](http://mtcoptics.com/warranty)

**Date of Purchase:** \_\_\_\_\_

**Receipt with Dealer Stamp/Details:** \_\_\_\_\_

**Customer Name:** \_\_\_\_\_

**Customer Address:** \_\_\_\_\_

**Scope type and size:** \_\_\_\_\_

**Scope serial number:** \_\_\_\_\_



[www.mtcoptics.com](http://www.mtcoptics.com) | [support@mtcoptics.com](mailto:support@mtcoptics.com)

Postal address in the UK:

MTC Optics Ltd, Unit 3, Raleigh Hall Industrial Estate,  
Eccleshall. Staffordshire ST21 6JL United Kingdom.

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