MTC optics

User Manual

MTC *Mamba*

Forward

Thank you for buying this Viper Scope with the reticule designed solely by MTC Optics.

. The Mamba range of scopes are manufactured with the following features:

- ✓ ETE Microlux coated lenses
- ✓ Fully waterproof, fog-proof and shockproof (warranted for any calibre)
- ✓ Ultra low profile windage and elevation turrets
- ✓ Removable IR adjustment housing
- ✓ 30mm tube

Our scopes have been manufactured by a company who have been making glass for many of our prestige Japanese branded scope manufacturers for years. We think you' will be impressed.

Sammie and Gary Cooper, of MTC Optics have between them, been hunting for 45 years. Gary writes for Airgun World and Realtree and won the UKAHFT open series in 2004 and was runner up in 2005, Sammie was ladies series winner in 2004 and runner up in 2005. They designed the Small Calibre Ballistic reticule to be universally useful for hunting and target shooting for air, rim-fire and centre-fire rifles.

Your scope is guaranteed free of all defects for 3 years from date of purchase, and this warranty is transferable as long as we are informed at time of re-sale.

If you have any questions or problems please feel free to contact us on:

support@mtcoptics.com

Telephone 08450 941542 (local call)
Fax 01666 825504
Or via our website www.mtcoptics.co.uk

Guarantee Registration

Date of Sale

Dealer Stamp

Dealer Signature

Dealer Print name

Care and Maintenance.

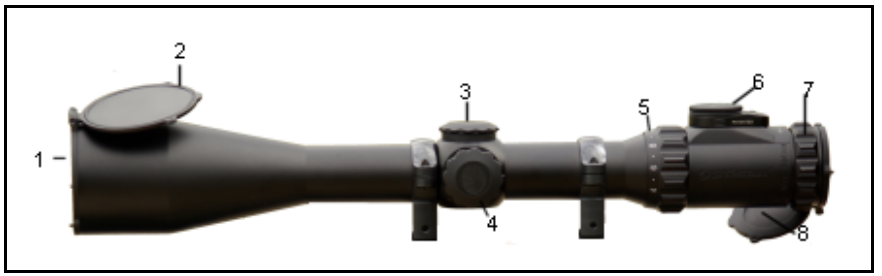
The Viper is a precision optical instrument and needs to be treated with care.

Clean the casing with a damp and soft cloth, then dry. Close the lens protective covers when the scope is not in use to protect the lens.

When necessary clean the lenses ONLY with a lens cleaning cloth and lens cleaning fluid suitable for photographic equipment. Store the scope in dry, well-ventilated place.

Before starting

Please see the picture on the right and familiarise yourself with the contents of your scope box, and terminology used in this description. Please see Fig1 and accessory list



Adjustable parallax models (3-12 / 4-16)

1.Objective	2.Front Flip Up	3.Elevation	4. Parallax Adj
5. Magnification	6. Removable IR	7. Fast Focus	8.Rear Flip up

Non Adjustable parallax models (1-4 / 1.5-6)

1.Objective	2.Front Flip Up	3.Elevation Turret	4. I R Control
5. Magnification	Not fitted	7. Fast Focus	8.Rear Flip up

Fig 1 : Controls and adjustments

Included Accessories

- Metal flip ups (attached)
- 3” Sunshade
- Mounts
- I/R battery and spare
- Sunshade adapter ring
- Flip up adjustment tools
- Allen keys

OPERATION OF THE SCOPE

1. Mounting the scope

The scope must be mounted using 30mm diameter rings. These rings should not be over-tightened or damage may result. Ensure rings are high enough to allow the scope objective lens to clear the rifle, but not so high as to make sure the eyepiece is too high so making sighting difficult. Please do not use poor quality mounts as they will cause misalignment and inaccuracy. Ensure that the horizontal cross hair is parallel to the action. This is best done by placing a level on the action and sighting the vertical cross hair down a vertical edge / plumb line etc.

2. Fast Focus 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. See Fig 3.

3. Focusing

Focus the sight on the target using focusing ring (Parallax adjustable models only) (Fig4). This is called parallax adjustment. Never try to zero without a perfectly clear picture as aiming errors will occur due to parallax error.

4. Turret Operation

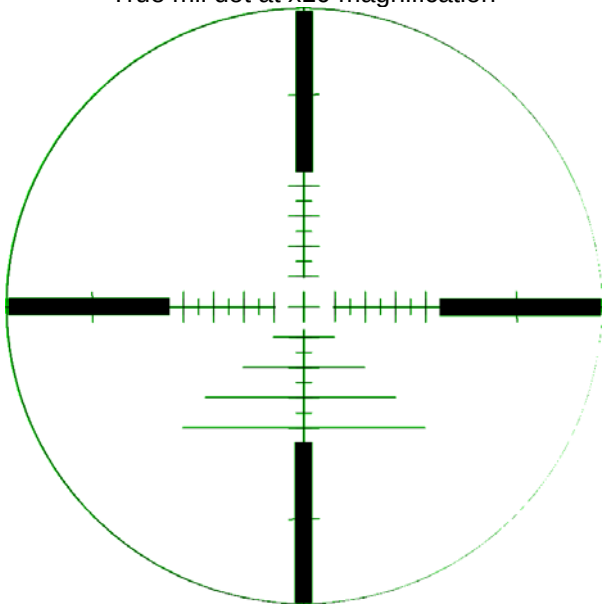
Windage and Elevation turrets both benefit from Optisan's patented low profile configuration. Access to the adjustment is gained by removing the covering caps. The adjusters are finger adjustable. Inside the windage adjuster cap is stored a spare battery. (fig 5 & 6)

5. Metal Flip Up Adjustment & Sunshade fitting

The scope comes with the flip ups fitted, please note that the flip up is held tight by a locking ring with 2 small indents in the face. This ring can be slackened by using the silver tools provided and the angle altered or the flip up removed. If the sunshade is to be used the flip up should be removed and attached to the sunshade using the procedure above. The adapter ring is then fitted into the scope, the sunshade then screws into the adapter ring.
Obviously a sunshade will reduce the amount of light entering the scope, so in times of low light it should be removed. (see fig 7 & 8)

SCB Reticule Discussion

True mil dot at x10 magnification



We have included a blank ret for you to photocopy. This is useful for you to note your aiming marks for the various ranges. The primary hold over aiming marks are given – ½ mil dot at the bottom of the floating cross, ¾ mil dot at the top of the vertical ret, then 1 mil dot on the 1st cross. These are mirrored on the upper cross hair and the horizontal left and right hairs. The small lines bisecting the thicker cross hair correspond to 10 mil dots from the centre or 20 mil dots between them. These have been included for target bracketing. We feel the Christmas tree reticule leads to faster target acquisition, more awareness of cant and better windage calculation.
This scope can be used on any calibre rifle of rifle, long term tests have been carried out on large calibres up to .50 bmg. Rim and centre fire trajectories will vary dramatically and so we don't attempt to predict, but for information and example a few air rifle aiming marks are shown

Holdover at given ranges in mildots, 1.75" scope height													
	Zero	**10**	**15**	**20**	**25**	**30**	**35**	**40**	**45**	**50**	**55**	**60**	**65**
0.177 12ft/lb	**35yds**	0.9	-0.1	-0.5	-0.5	-0.3	0.0	0.4	0.8	1.3	1.9	2.5	3.0
.22 12ft/lb	**30 yds**	0.0	-0.8	-0.8	-0.5	0.0	0.6	1.3	2.5	3.0	4.0	4.7	5.7
.22 28ft/lb	**45 yds**	0.7	0.0	-0.5	-0.6	-0.6	-0.5	-0.3	0.0	0.4	0.6	1.0	1.3
Pellets shown Daystate FT.					***Hold under shown as negative***								

Technical Specifications:

Optical magnification	1-4x, 1.5-6x, 3X-12X , 4X-16X
Field Of-View Ft@1000yds/M@1000m	Varies with scope
Min. focusing distance	10yds (pa 100 yds on non-pa)
Dimensions	44mm , 50mm objective
Weight	520g / 570g
Eye relief	3.5”-3.2”
Battery	CR2032

SCB Reticule

By MTC Optics. Pat pending

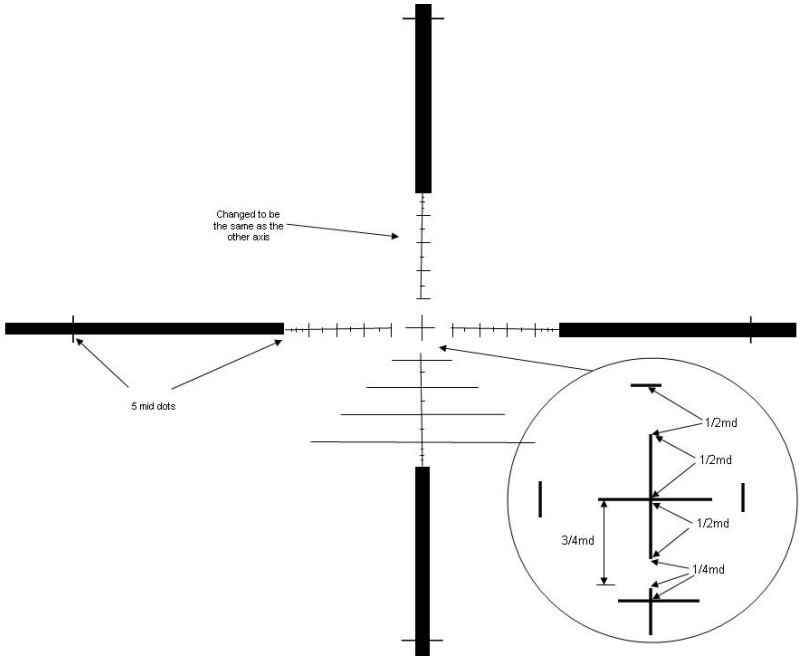


Fig 3 : Fast Focus Adjustment

Fig 4 : Parallax Adjustment

Fig 5 : Elevation Adjustment

Fig 6 : Windage Adjustment (showing spare battery)

Fig 7 : Metal Flip-up Lens Cover (Closed)

Fig8 : Metal Flip-up Lens Cover (Open)

5. Zeroing your rifle

Remove the turret covers and store in a safe place. Place a suitable target at 15 yards, 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). When the 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. When you are happy that your rifle is zeroed correctly re-fit the turret covers.
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.

6. Illuminated Reticule

RIR / Parallax adjustable models only
It is recommended that the battery (CR2032 or equivalent) be removed from the scope until the I/R is required. To fit simply unscrew the cover and insert observing correct polarity. To increase brightness press the plus button repeatedly, after maximum brightness is reached the I/R will turn off. Pressing both buttons at once also turns off the I/R. Over illuminating the reticule will obscure the target at night. (Fig 9 & 9a).
Side I/R non-parallax adjustable models only
Insert the battery by simply unscrewing the I/R cover, observing correct polarity. On/Off and adjustment is carried out by rotating the I/R adjustment knob. Again it is advised not to insert the battery until the I/R is going to be used. (see Fig 10)

7. Removing the I/R Control Housing

The I/R control housing is designed to be removable. This is not necessary in normal use but the main wear and tear on any scope of this nature will be either the turrets or the I/R control. We can't make the turrets removable but if the I/R goes wrong we can simply send you a new housing. You don't have to remove your scope. To remove, grip firmly and pull upwards.
Caution – repeated removal and replacement will obviously impair electrical contact and is to be avoided.

CAUTION : NEVER LOOK AT THE SUN OR ANY BRIGHT LIGHT DIRECTLY ESPECIALLY THROUGH A SCOPE. PERMANENT EYE INJURY OR EVEN BLINDNESS CAN RESULT

Fig 9 : Removable I/R

Fig 9a : I/R removed

Fig 10 : Side I/R