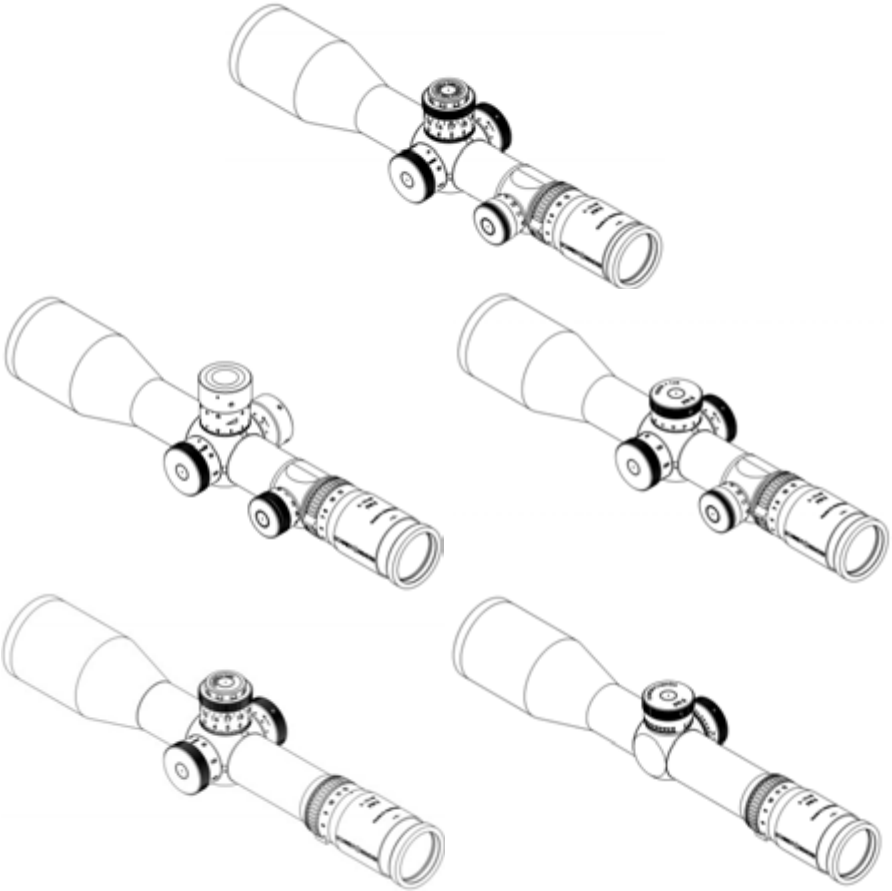
SCHMIDT ⊙ BENDER

3-12x50 PMII



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1. Scope description

1.1 Introduction

The Schmidt & Bender PM II series scopes are designed to meet the unique challenges of high precision shooting. Their quality and function make it possible to achieve exceptional shooting results as well as to fulfill the critical and demanding needs of official, law enforcement and tactical applications. Strict observation of the following operating instructions is prerequisite for successful long-term use.

1.2 Safety instructions

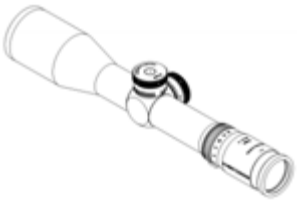
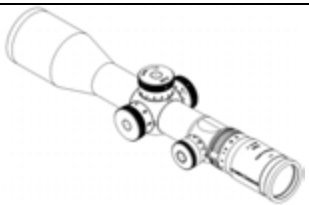
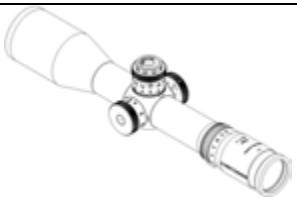
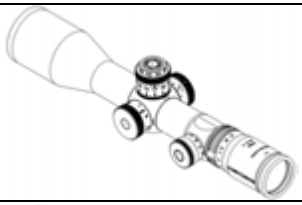
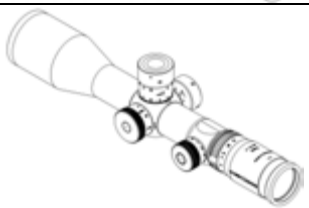
Never look into the sun or into laser light with the scope. This may cause serious eye injuries. Do not tamper with the scope. Any repairs beyond the maintenance described in the maintenance manual should only be performed by Schmidt & Bender or by other specialists authorized by Schmidt & Bender. Protect the scope against shocks beyond normal use.

Avoid unnecessary long exposure of the scope to direct sunlight; intense and excessive sun radiation will cause extremely high temperatures inside the tube which may be detrimental to the scope.

The scope must be properly mounted to the firearm by a qualified specialist. Perfect mounting is an essential requirement for maximum accuracy and efficient functioning of the firearm and the scope. Be sure to assume the proper firing position and keep a correct eye relief in order to obtain an optimal full field of view and to avoid any injuries due to the recoil of the weapon.

2. Configurations

This manual uses figures of configuration 4 "Double Turn, illuminated, with parallax-adjustment" to demonstrate the functions of the scope. The manual can be transferred on any other configuration.

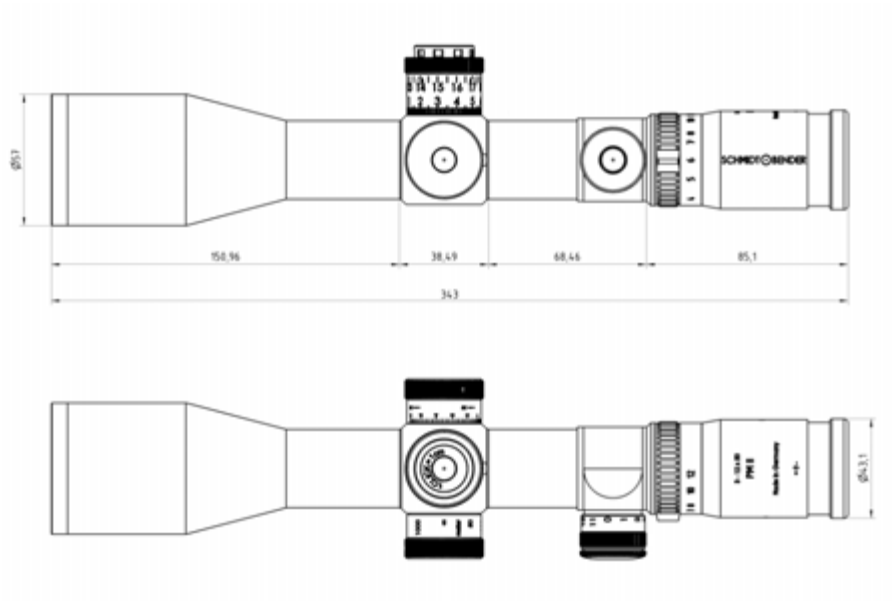
	Version: Elevation: Single Turn Windage: Single Turn Illumination: no Parallax adjustment: no
	Version: Elevation: Single Turn Windage: Single Turn Illumination: yes Parallax adjustment: yes
	Version: Elevation: Double Turn Windage: Single Turn Illumination: no Parallax adjustment: yes
	Version: Elevation: Double Turn Windage: Single Turn Illumination: yes Parallax adjustment: yes
	Version: Elevation: Double Turn with MTC fuction Windage: Single Turn with Zero-Stop function Illumination: yes Parallax adjustment: yes

3. Technical data

3.1 General data

• Magnification	-	3x – 12x	
• Objective lens diameter	-	50	(mm)
• Field of view	-	11,1 – 3,4	(m/100m)
• Exit pupil	-	14,3 – 4,3	(mm)
• Eye relief distance	-	90	(mm)
• Twilight factor	-	12,2 – 24,5	
• Transmission	-	90	(%)
• Diopter adjustment	-	+2 to -3	(dpt)
• Reticle focal plane	-	1st	

3.2 Dimensions



Illustr. 1: Dimensions from the scope (in mm)

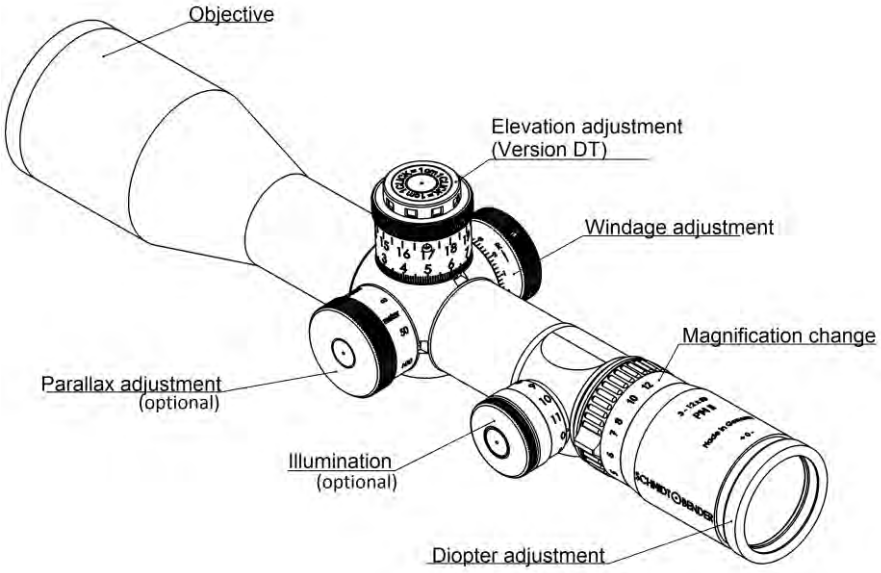
4. Scope of supply

The following accessories are supplied along with the riflescope. These parts can be ordered from a specialist dealer or our service if necessary.
Further accessories can be found on our homepage.

Lens Cleaning Kit
2 mm allen key
Registration card, Reply card, Scope label

5. Operating instructions

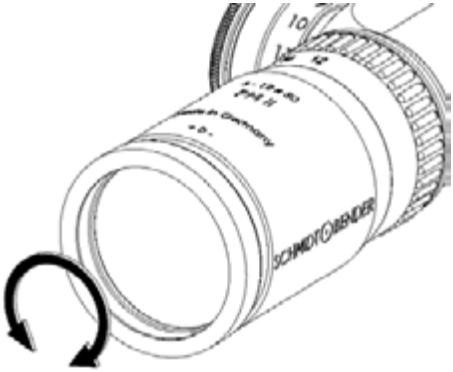
Your new Schmidt & Bender riflescope consists of different functional parts and adjustments (See Illustr. 2).



Illustr. 2: Scope parts and controls

5.1 Adjusting the image focus with the diopter adjustment of the eyepiece

At the eyepiece, you can adjust the sharpness of the reticle to your eye. Make this the riflescope to 12-fold magnification. Rotate the eyepiece until the stop to the left and turn so long now to the right until you see the reticle in an optimal image sharpness (see Illustr. 3). As the vision of the eye over a prolonged period may very well undergo large fluctuations, regular adjustment of the eyepiece is recommended.



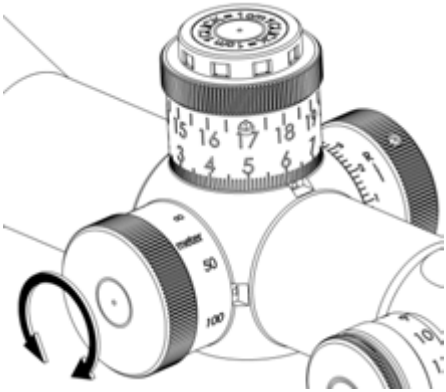
Illustr. 3: Diopter adjustment

5.2 Parallax adjustment (optional)

The 3-12x50 PMII scope provides parallax compensation with an easily operable setting wheel (see Illustr. 4) positioned as a third turret opposite the windage adjustment. With this turret the shooter may easily focus targets at any distance without having to interrupt his target acquisition.

The parallax adjustment turret is engraved with distance markings. If the distance to the target is known rotate the turret so that the corresponding distance marking lines up with the index mark on the saddle.

If the distance to the target is not known set the scope to the highest magnification and then move the adjustment ring of the parallax compensation in the direction of the estimated distance until you obtain a focused image. Now the parallax has been properly adjusted and you may also read the distance on the turret.



Illustr. 4: Parallax adjustment

This feature is available for scopes with parallax-adjustment only.

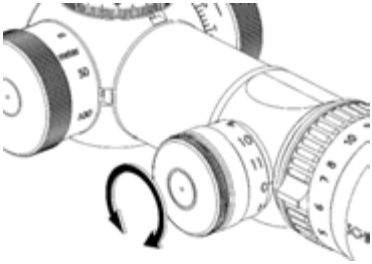
5.3 Illumination control

The illuminated reticle is designed to help identifying the correct aiming point on a dark target and/or in poor light conditions.

First, set the intensity of the illuminated reticle to the respective light conditions. To do this the illumination control may be turned from -0- toward position -11- until a setting is achieved where the illuminated portion of the reticle is just bright enough to be picked up by the eye without glaring. If possible, this adjustment should be performed under quiet conditions prior to the actual shooting. (see Illustr. 5).

If the illumination is not switched off by the shooter after use, illumination control electronics automatically switch off the illumination after 2 hours.

If the illumination starts blinking, the battery is low and should be replaced.



Illustr. 5: Illumination control

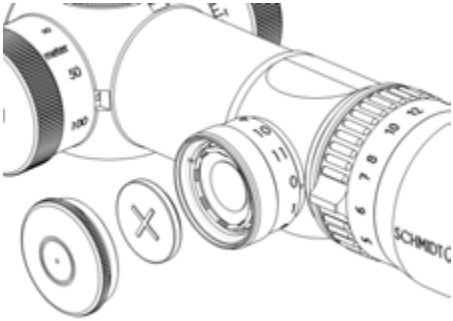
This feature is available for illuminated reticles only.

5.4 Changing the battery (optional)

To replace the battery screw off the battery cap and remove the old battery.

Please discard the used battery in an ecologically compatible way!

Place the new battery (coin cell CR 2032/3V) with the „+" facing up into the battery compartment. Do only change the battery in a dry environment. Battery service life is at least 100 hours at the highest intensity (see Illustr. 6).



Illustr. 6: Battery replacement

This feature is available for illuminated reticles only.

5.5 Using the reticle for the distance estimation

The different available reticles offer a variety of possibilities to estimate or measure important parameters by means of reticle subtensions. This allows the shooter to place highly precise shots even on large distances by use of the estimates, the ballistic compensator and the parallax adjustment.

The reticle is in the first focal plane such that the reticle subtensions remain constant on all magnifications.

Exemplary for one reticle in the first focal plane (see Illustr. 7 on next page) the distance "E" of the large tics corresponds to 10cm/100m. The shooter can thus calculate the distance to a target which size is known by measuring it with the reticle pattern: If a 10 cm sized target fits inbetween two large tics, it is positioned in a distance of 100 m

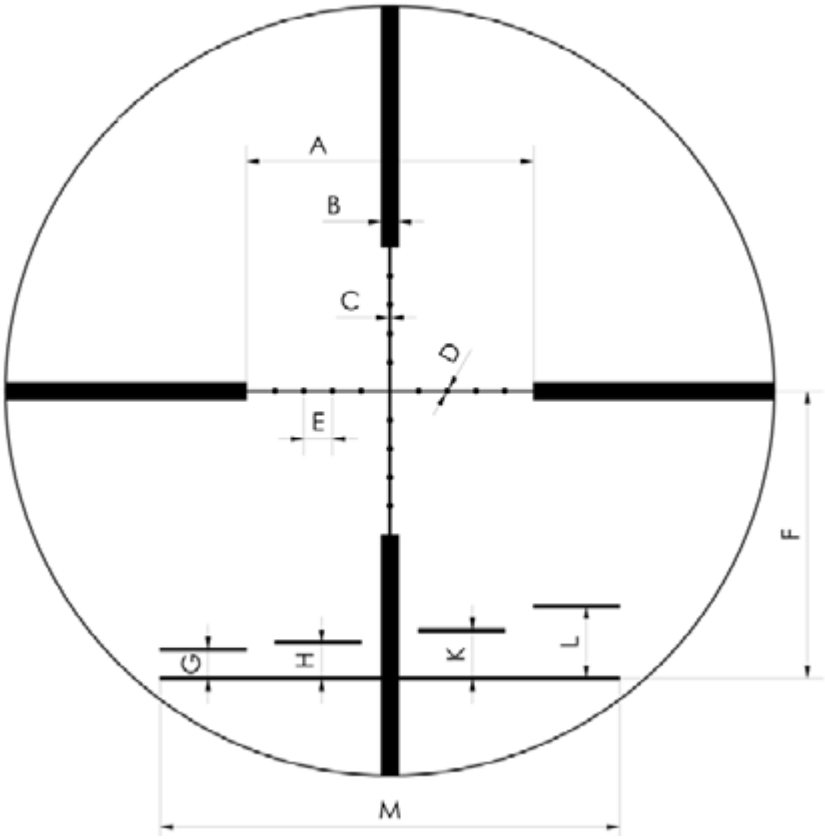
For arbitrary object sizes and distances a relation exists according to the following formula:

$$d = \frac{g}{a} * 100\ m$$

Whereas

d is the distance to the target,
g is the estimated size of the target,
a is the size of the target on the reticle pattern.

According to the measured distance, the parallax can be set and the bullet drop can be compensated by the elevation turret.



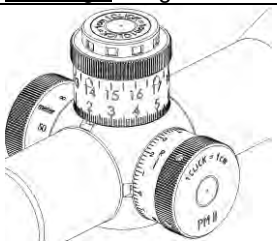
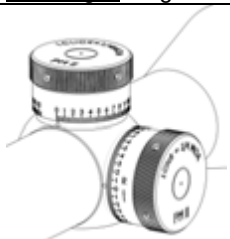
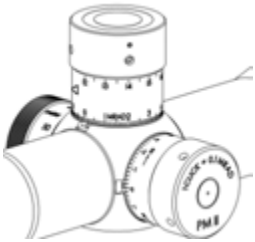
Illustr. 7: Notation of subtensions

The reticle subtensions for your reticle can be found in the catalog or on the available datasheets.

6. Point of impact correction

6.1 Variations and features of the elevation- and windage-turret

The 3-12x50 PMII Ultra Short is available in various versions. Please refer to the table which model corresponds with your scope and read into the corresponding positon what opportunities the turrets are able to provide.

Turret-configuration 1	Turret-configuration 2	Turret-configuration 3
Elevation: Double Turn with color cylinder for second revolution Windage: Single Turn	Elevation: Single Turn Windage: Single Turn	Elevation: Double Turn mit MTC-Funktion Windage: Single Turn with Zero-Stop
		
➔ Seite 16 (6.1.1)	➔ Seite 17 (6.1.2)	➔ Seite 17 (6.1.3)

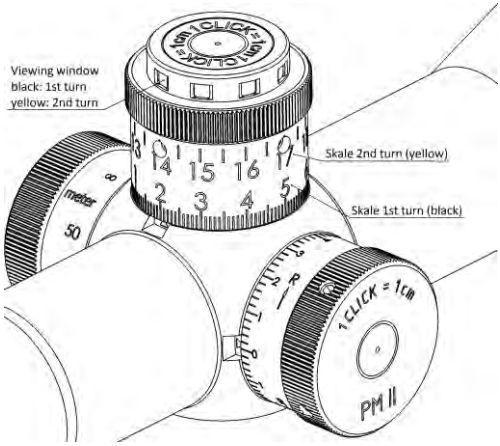
6.1.1 Configuration 1:
Elevation: Double Turn Turret
Windage: Single Turn Turret

The elevation turret includes the following features:

- Double Turn

The elevation turret provides a fine click adjustment value in addition to a large elevation adjustment in two revolutions.

When entering the second revolution, a color cylinder in the viewing window of the turret turns yellow. Consequently, the upper (yellow) scale of the turret refers to the adjustment values in the second turn. Thus, the user can visually detect the position of the elevation turret at any time (Illustr. 8).



Illustr. 8: Functioning of the revolution indicator

The windage turret includes the following features

- Single Turn

6.1.2 Configuration 2:
Elevation Turret: Single Turn
Windage Turret: Single Turn



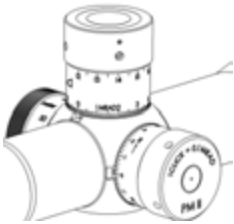
The elevation turret includes the following features:

- Single Turn

The windage turret includes the following features:

- Single Turn

6.1.3 Configuration 3:
Elevation Turret: Double Turn
with MTC function
Windage Turret: Singel Turn
with Zero Stop function



The elevation turret includes the following features:

- Double Turn
- MTC (More Tactile Clicks)

The elevation turret provides a fine click adjustment value in addition to a large elevation adjustment in two revolutions. The lower scale refers to the first revolution - the upper scale refers to the second revolution.
When the turret is rotated into the second revolution a small cylinder pops up on top of the turret which indicates to the user that the second turret revolution has been reached.

The MTC (more tactile click) elevation turret has an audible "clunk" on every 10th click.

The Windage-Turret includes the following features:

- Single Turn
- Zero-Stop-Function

The windage turret locking function works basically the same as on the elevation turret. The windage turret has one positive "clunk" at the zero position which provides a "0" reference point.

6.2 Preliminary adjusting and fine adjusting when sighting in

When sighting in the scope for the first time, or re-sighting the scope due to service or repair, a test shoot for zeroing the scope must be performed on a 100m distance. Therefore, ensure that the parallax is set to the correct value of 100m and that both elevation and windage turrets are set to "0". The double turn turret must be set to the first revolution.

The differences arising from the shot image towards the target, must now be corrected according to the procedure described in paragraph 6.3 and 6.4.

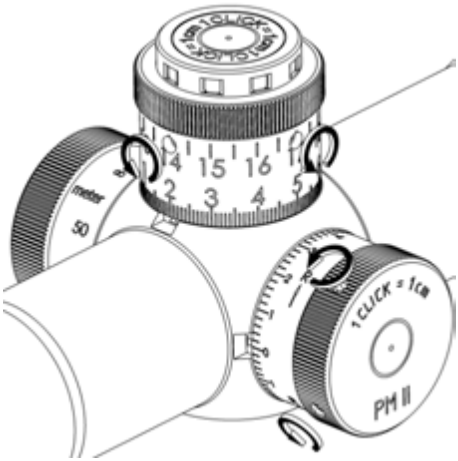
Please verify the centered shot pattern by again firing a group of shots at the target. If necessary repeat the correction procedure.

After sighting in, the scope must be zeroed. Therefore, loosen the screws on the turrets with an Allen key by turning it counter-clockwise. Please do not remove the screws completely (Illustr. 9).

Now lift the caps carefully about 2 mm and turn it back to zero. When adjusting the height, turn towards the descending numerical scale to the extent that the double turn indicator is black, so indicating the first turn.

Then press the caps back down and fix the screws with the Allen key.

When the screws are loose and the cap is lifted up, the click adjustment must not be noticeable. If otherwise, the caps must be lifted somewhat higher.



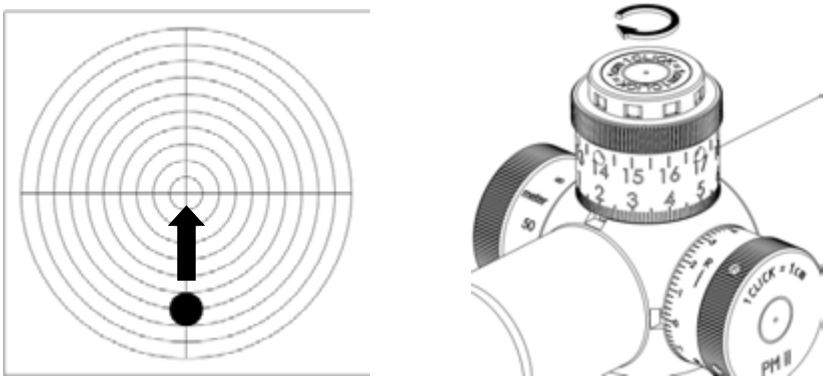
Illustr. 9: Zeroing of the turrets

This procedure is equal for all turret-configurations.

6.3 Elevation adjustment

Depending on the configuration, the point of impact is moved by either 0.1mrad (1cm on 100m) or ¼ MOA with every click. A too low point of impact is corrected by rotating the elevation turret clockwise (see Illustr. 10), a too high point of impact by rotating the elevation turret counter-clockwise.

⓫ For counter-clockwise rotating turrets this relation is opposite!



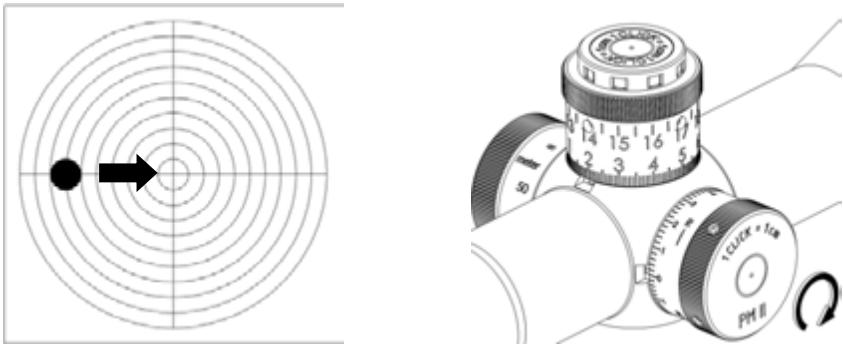
Illustr. 10: Elevation adjustment

This procedure is equal for all turret-configurations.

6.4 Windage adjustment

Depending on the configuration, the point of impact is moved by either 0.1mrad (1cm on 100m) or ¼ MOA with every click. A too far left point of impact is corrected by rotating the windage turret clockwise (see Illustr. 11) a too far right point of impact is corrected by rotating the turret counter-clockwise.

ⓘ For counter-clockwise rotating turrets this relation is opposite!



Illustr. 11: Windage adjustment

This procedure is equal for all turret-configurations.

7. Maintenance

7.1 Using the scope covers

To protect the scope and its lenses against adverse environmental conditions like sand, dust, rain, snow, etc., the protective flip-up caps of objective and eyepiece should be closed after every use of the scope. Before shooting, make sure that the caps are open.

7.2 Care and maintenance

Schmidt & Bender PM II scopes do not require any special maintenance. All metal parts have a hard anodized surface that is extremely scratch-resistant and easy to care for.

For cleaning outer surfaces, use a clean and, if necessary, a slightly damp cloth.

For cleaning the optics use the included Schmidt & Bender cleaning kit.

Before wiping the optic's surfaces, use a dry brush to remove coarse dirt or dust particles. Slight impurities may then be wiped off using an optic's cleaning cloth.

Breathe onto the optic's surfaces before cleaning them, this helps with the cleaning process. Excessive dirt may be removed using the cleaning liquid included in the cleaning kit.

Avoid dry rubbing on the outside optical surfaces, this may harm the precious coatings.

7.3 Storage temperature

The approved temperature range for the storage of the scope is from -55°C to +70°C.

8. Warranty certificate

We hereby certify that our Quality Management System has been approved by Unternehmensgruppe TÜV* Rheinland Berlin Brandenburg to the following Quality Management Standard: The TÜV Cert Certification Body of TÜV Anlagentechnik GmbH (Unternehmensgruppe TÜV Rheinland Berlin Brandenburg) certifies in accordance with TÜV Cert procedures that Schmidt & Bender GmbH & Co. KG, Am Grossacker 42, D-35444 Biebertal has established and applies a quality management system for the design, production sales and service of fine mechanical optical instruments. Main product telescopic sights. Proof has been furnished that the requirements according to ISO 9001 (# Registration No. 01 100 67280) are fulfilled. All parts have been thoroughly inspected in accordance with the afore-mentioned Quality Management System and correspond to the requirements of the specifications, drawings, test procedures and standards in all respects.

Note *: TÜV means German Association for technical Inspection

Guarantee clause:

Official legal guarantee period of 2 years (according to the directive of EU)

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