FOR GOVERNMENT USERS ONLY

Manual: Collimation TigIR-6M™

The TigIR-6M™ was developed exclusively for military and government customers to be used as a clip-on thermal in front of a scope. The TigIR-6M™ is already pre-collimated ex works.

To obtain the maximum precision possible, at least a check of the collimation is mandatory. This should be done with the rifle scope mounted on the weapon and zeroed. Small deviations can be corrected during fine collimation. The aim is to superimpose the camera image and the real image as precisely as possible.

The buttons of the TigIR-6M™

The TigIR-6M™ mounted on a scope

Precollimation

1. Take the weapon with the scope and aim for an object that is visible in both the visible and thermal image spectrum. This can be a halogen lamp or a church spire. The object should be at a distance of at least 50 m/165ft. Align the telescopic sight so that it is in alignment with the object.

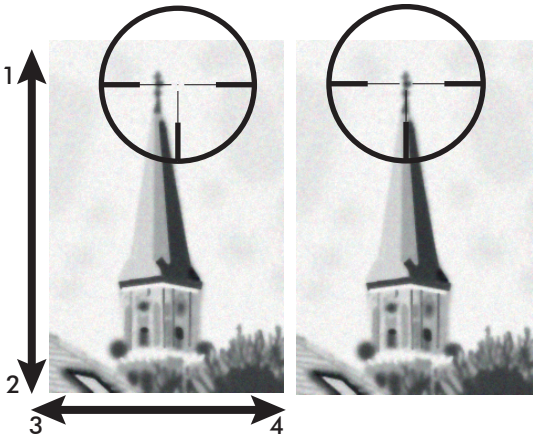
2. Fixate the weapon by means of bench rest, sandbags or a second person to keep the weapon reliably in position.

3. Switch on the TigIR-6M™. Access the collimation menu by
   a. pressing and holding buttons 1 and 3 simultaneously (at least one second),
   b. pressing and holding button 1 to access the IMG menu,
   c. pressing button 1 briefly,
   d. pressing and holding button 1 to access the sub-menu COLL, therafter
   e. pressing and holding button 1 to select the memory position (1-6) in which you want to store your collimation and start collimation by pressing and holding button 1 on SET.

4. Mount the TigIR-6M™ in the proper position in front of the scope without moving the weapon. The object should ideally already be in the center of the reticle at 1x zoom. If that is the case, please continue with 6.

5. When the object is not yet in the center of the reticle, you can align the image by pressing the buttons

briefly. Button 1 moves the image down, button 2 moves it up, button 3 moves it left, and button 4 moves it right.



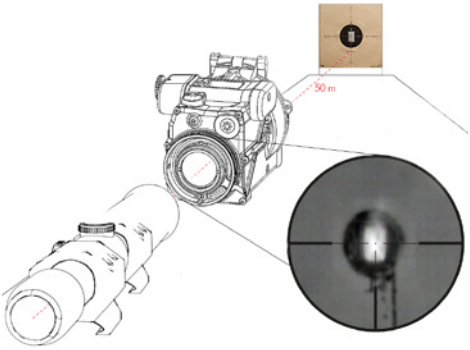
By removing the TigIR-6M™ briefly, check whether the object is still in the center of the reticle even in the visible spectrum. Repeat this step if necessary.

6. Now change to the zoom level 2× by pressing and holding button 2 and perform the collimation according to step 5. Repeat step 6. until all zoom levels are collimated. After collimation of the highest zoom level pressing and holding button 2 changes back to the lowest zoom level etc.

7. Save the settings by pressing and holding button 4.

Fine collimation

After completion of the pre-collimation, the system weapon - scope - TigIR-6M™ can be test-fired. Now a group of hits with a radius of about 2-4cm at 100m should be achieved. To improve this to 1-2cm, fine collimation will be done afterwards.



1. Switch to the collimation menu (see pre-collimation 3.) and fire test shots at the target.

2. For example, if the group of hits is to the right of the aim, press button 3 (moves the image to the left) to correct. If it is too high, for example, press button 1 (moves the image down) to correct the error.

Step widths of the TigIR-6M™

The step width of the keystrokes is shown in the following table for each zoom level. The success is checked step by step by test shots until no improvement can be observed in the selected zoom level.

Adjustment per keystroke in cm depending on the distance

TigIR-6M™	0.8x	1x	2x	4x	6x
50m	1,09	1,09	0,55	0,55	0,55
100m	2,18	2,18	1,09	1,09	1,09
150m	3,27	3,27	1,64	1,64	1,64
200m	4,36	4,36	2,18	2,18	2,18

Max. adjustment in cm/100m	windage	elevation
0.8x	113	87
1x	401	323
2x	449	358
4x	572	459
6x	611	489

Step widths of the TigIR-3M™

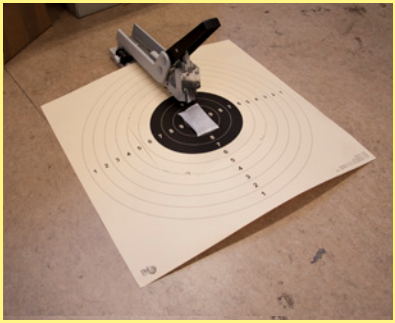
The step width of the keystrokes is shown in the following table for each zoom level. The success is checked step by step by test shots until no improvement can be observed in the selected zoom level.

Adjustment in cm per keystroke depending on the distance

TigIR-3M™	1.6x	2x	4x	8x	11x
50m	1,09	1,09	0,55	0,55	0,55
100m	2,18	2,18	1,09	1,09	1,09
150m	3,27	3,27	1,64	1,64	1,64
200m	4,36	4,36	2,18	2,18	2,18

Max. adjustment in cm/100m	windage	elevation
1.6x	56	43
2x	200	161
4x	224	178
8x	285	228
11x	305	244

Tips and tricks for thermal imaging targets



Chemical hand warmers are particularly well suited as indoor target.

Shooting outdoors has been successful when using targets with a strong black and white contrast which are exposed to sunlight.

Sprayed water, which generates evaporation-based cooling, has also proved to be a good negative contrast.

Also steel targets, possibly coated with a lacquer layer, are suitable as targets, because they represent hits as a clearly visible bright point. This effect can also be observed at short distances when firing at cardboard targets. The thicker the better. At distances of more than 50m, hits are usually no longer visible in the thermal image. In this case, optical feedback (spotting scope, camera or similar) is required for feedback.