



**NOCTURN
INDUSTRIES**
INNOVATIVE NIGHT VISION SOLUTIONS

UANVB / UANVB-R Operators Manual



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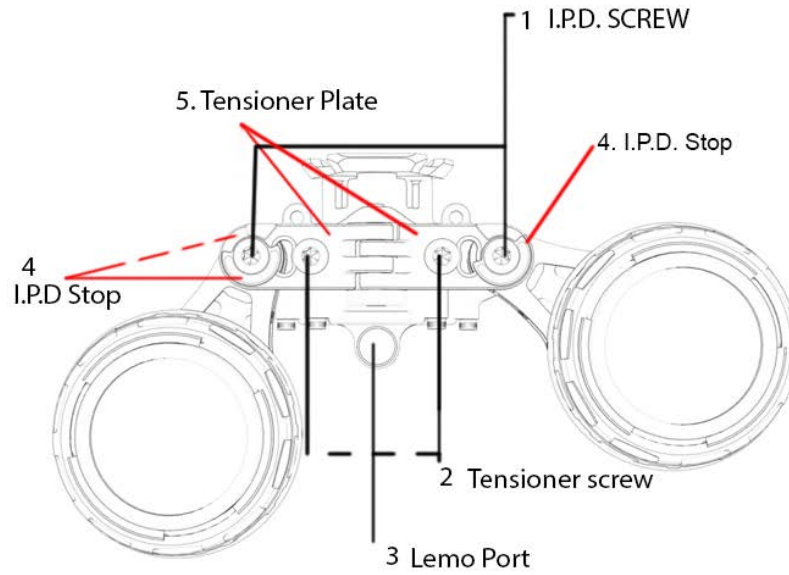
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Product Overview

The UANVB Katana (Ultralight Articulating Night Vision Binocular)

The Katana is a fully articulating night vision binocular that has a built in on/off power function when pods are rotated into the out (up) and in (down) positions. The pod on/off feature will operate individually per pod. Left up/down will operate power on/off for left image intensifier tube pod left. Right pod up/down will operate power on/off for right image intensifier tube pod right. The binocular device features an all new "Friction Lock Interpupillary Adjustment" system, the I.P.D stops that will allow the user to set IP stop distance relative to user preference (space from left eye to right eye). The binocular device uses infinity locking rings that will allow user (or manufacturer) to set maximum focus distance on the front objective lens to infinity enabling quick adjustment between "close" and "far" focus distance with a firm stop at maximum focus every time. The night vision binocular will feature a rear tensioning plate fastening the pod housings to the bridge (center) of the device. The tensioning plate will feature 1 screw on each plate, that when tightened or loosened will adjust friction tension, that translates to how stiff or soft the ability to articulate out (up) and in (down) will feel. Loosened being a softer looser articulation and tighter being a stiffer tighter articulation. The night vision device will have a hard on/off power button that will power the device on and will only power off if clicked into the power off cycle or if pods are articulated into the out (up) position at an angle appropriate to activate individual power off feature. If power is hard cycled on and pods are articulated (rotated) into the in (down) position the individual pods will power the image intensifier tubes on respective to the side that is being articulated into the on (down) position. The night vision binocular will feature a dovetail for mounting to dovetail compatible helmet mounts. The night vision binocular will feature a single purge port on each pod used for purging of each pod and will be sealed with a purge screw and o-ring.

Back Diagram



3b. Lemo connector



Lemo plug in orientation indicator

1. I.P.D. Screw – The Interpupillary Distance screw has a factory torque setting of 8.5-inch pounds. The I.P.D. screw should not be adjusted by the user. The I.P.D. screw torque setting ensures that the interpupillary distance stop has enough resistance to provide a sure stop upon articulation down but may still be pushed past the stop limit for user inner pupillary distance adjustment.

Adjustment or tightening of the I.P.D. screw may result in loss of I.P.D. stop function, loss of I.P.D. stop function quality, or potential shearing (breaking) of titanium screw head.

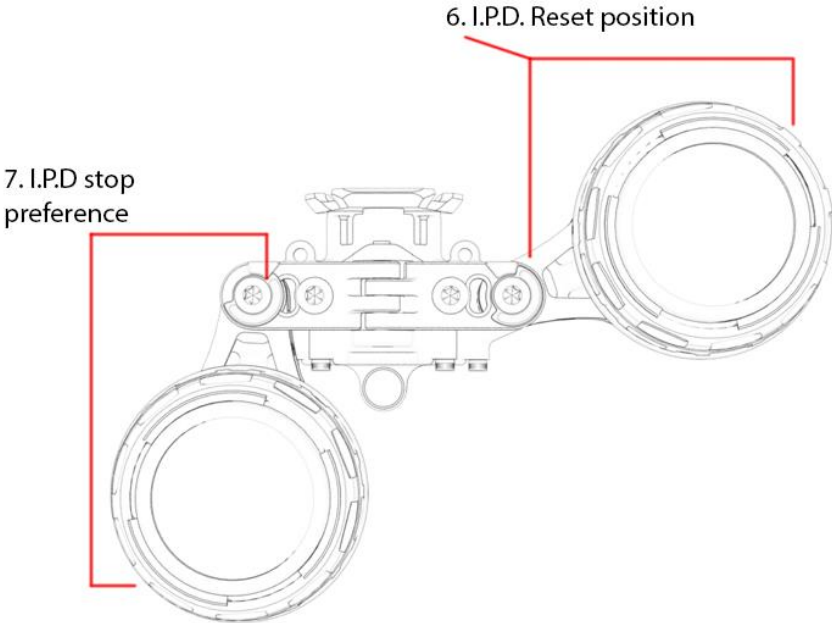
2. Tensioner Screw – The tensioner screw has a factory torque setting of 6.5-inch pounds. The tensioner screw may be adjusted by the user for articulation stiffness preference. The tensioner screw uses a T10 torx driver bit for adjustment. Tightening the tensioner screw will give the user a stiffer and tighter feel upon articulation. User should not tighten tensioner screw excessively. Do not exceed 10-Inch pounds. Excessive tightening will inhibit the pods ability to articulate and could result in damage of screw. User should only tighten tensioner screw slightly if stiffer articulation is desired.

3. LEMO Port- The baseplate of the night vision binocular bridge will have a LEMO port compatible with the push pull connector (3b.). The LEMO port will allow the user to connect the night vision binocular to an external battery pack to provide longer operating duration through the use of multiple batteries in the power pack. The user should be familiar with the use of LEMO connectors and should know to orient the connector with the indication dot on the male end connector and female end port before inserting the connector into the port on the night vision device. Twisting of the connection to find orientation may result in damage of the port or connection pins and render the LEMO port inoperable.

4. **I.P.D.** Friction Lock Stop – The interpupillary friction lock stop will enable the user to set the stopping point of each pod when rotated or articulated into the down position.

5. **Tensioner plate** – The tensioner plate is the mechanism used to fasten the pod to the bridge of the device. The tensioner plate will control the stiffness of motion when rotating pods for articulation control.

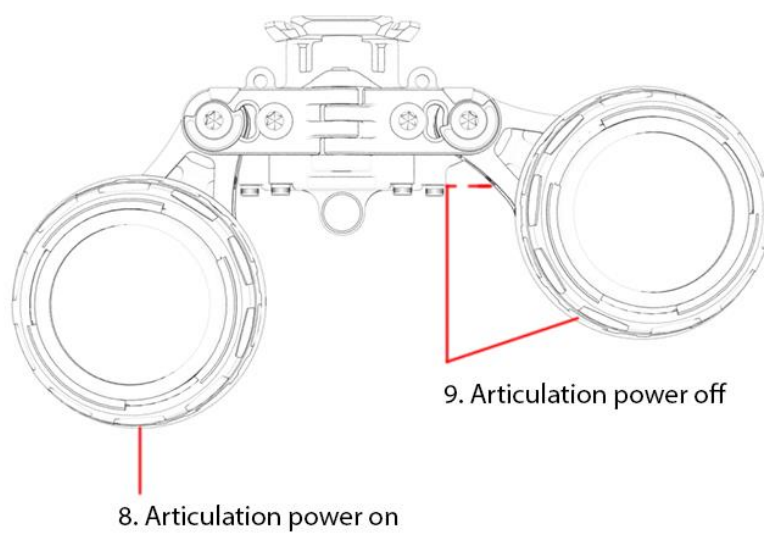
Interpupillary Distance Stop Adjustment



6. I.P.D. Reset Position – The I.P.D. friction lock mechanism may be pushed past the point of stop provided by the protruding tooth of the tensioning plate. The user can push against this protruding tooth to reset the I.P.D. mechanism.

7. I.P.D. Stop Preference – The I.P.D. stop can be set by the user by articulating (rotating) the pod in (down) to the users desired interpupillary position. The user can push the I.P.D. mechanism past the stopping point by articulating the pod until desired position is reached. Once set to the preferable I.P.D nothing more has to be done.

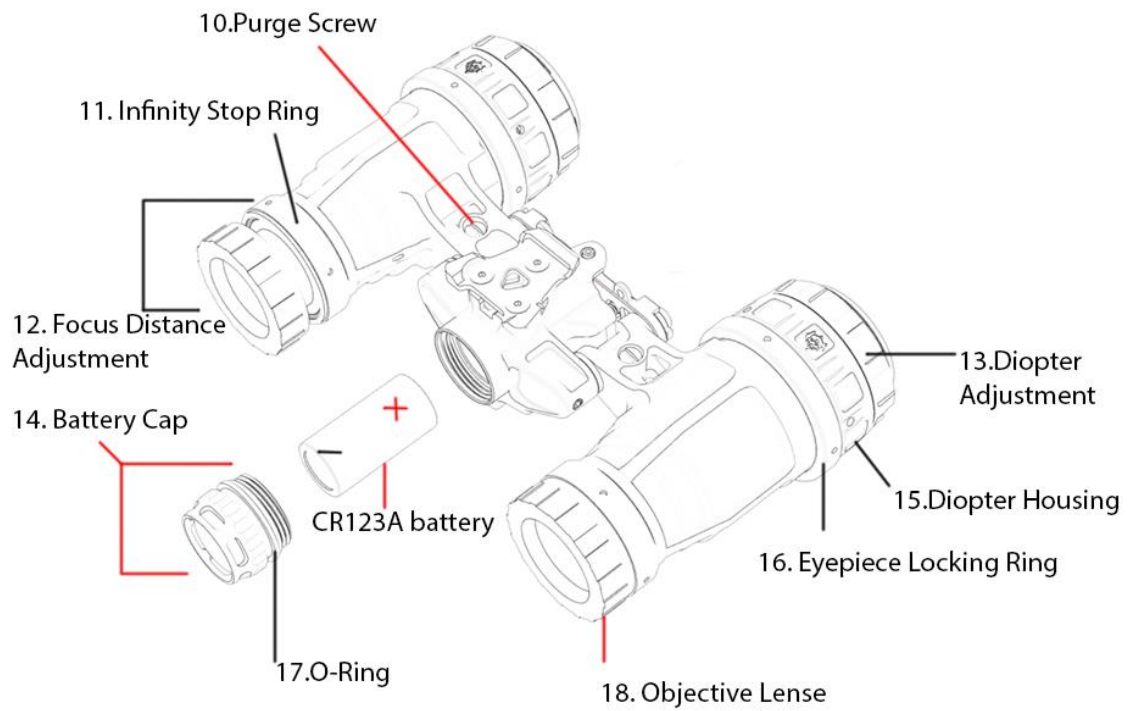
Individual On/Off Articulation



8. Articulation Power On – When the device is powered on using the battery cap on cycle or external power pack set to ON the individual pod will be powered on while in the in (down) position.

9. Articulation Power Off – When the device is powered on using the battery cap on click cycle or external power pack set to ON the individual pod will be powered OFF while articulated (rotated) to a position that exceeds the position at which the pod would power on.

Front Diagram



10. Purge Screw – The purge screw will be fitted with a small O-ring whose purpose is to seal the port used to purge the night vision binocular. The purge screw should not be removed by the user. If the purge screw is removed or loosened for any reason the seal of the pod may be breached allowing moisture to enter the pod. Moisture will expose the internal components to potential corrosion, and may cause the optics to fog over internally.

11. Infinity Stop Ring – The infinity stop ring can be set by the manufacturer on a test bench or by the user manually. When the objective lens (front) is set at infinity focus the stars in the sky are perfectly in focus. The infinity stop ring will be threaded outward towards the objective lens until contact is made and the objective lens is touching the infinity stop ring. The grub screw, a small screw threaded into one of the holes on the infinity stop ring can then be threaded inward and tightened against the threads of the pod to ensure that the infinity stop ring will be locked in place. Excessive torque should not be used to tighten the grub screw and the user should take proper care to ensure they only tighten the screw enough to stop the infinity stop ring from threading or unthreading with an appropriate amount of force. Once infinity stop ring is set the user can transition between focus distance at leisure but can return to infinity focus distance quickly and easily.

12. Focus Distance Adjustment - The objective lens (front) is the lens that will control the focus distance of the night vision binocular optics. The user will twist the objective lens so that the lens threads in and out of the end of the night vision binocular pod. While looking through the night vision binocular that is powered on with a functioning image intensifier tube and appropriate lens set, the objective lens can be twisted in and out by hand and the user will observe sharp focus point moving from

close distance to maximum distance gradually while twisting the lens. The lens can be unthreaded to a stopping limit that will be retained by the night vision binocular pod preventing the lens from unthreading completely and falling off. This will ensure that the seal of the night vision binocular cannot be breached, and purge seal will be maintained.

13. Diopter Adjustment – The outermost ring of the diopter assembly (rear) will be the diopter adjustment ring. As the diopter adjustment ring is twisted the diopter cell (lens) will move in and out within the diopter assembly from -6 to +2 diopter. As the user looks through the night vision binocular that is powered on with a functioning image intensifier tube installed and appropriate optic pair properly installed, the diopter adjustment ring can be twisted and the image will gradually adjust until a comfortable setting is achieved for/by the user. Adjust until your eyes are comfortable and a 1:1 image size can be seen through the eyepiece as compared to an un-aided eye.

14. Battery Cap – The battery cap is the night vision binocular ON/OFF switch. When clicked the battery cap will cycle between power on and off with each click. To ensure proper contact the battery cap must be threaded on and tightened properly. The battery cap may need to be tightened firmly to achieve proper connection.

15. Diopter Housing – The diopter housing assembly should be installed by the manufacturer or builder. The diopter housing assembly should not be threaded or unthreaded by the user. The user should take proper precautions to ensure they are not unthreading the diopter housing assembly. If the diopter housing assembly is adjusted (twisted) in any direction for any reason the optical collimation of the image while using the night vision binocular may be inhibited. If collimation is out of orientation the user may experience an uncomfortable experience that can cause headaches, disorientation, eye strain etc.,

16. Eyepiece Locking Ring – The eyepiece locking ring will be used to lock the diopter housing assembly in place. The user should not adjust the eyepiece locking ring. If the eyepiece locking ring is unthreaded or moved for any reason the diopter housing assembly may move and the visual collimation of the night vision binocular may be inhibited. The eyepiece locking ring will be set by the builder after proper collimation is achieved. There are no set screws holding the eyepiece locking ring in place, the user should take proper care to ensure they do not unthread or thread the eyepiece locking ring.

17. O-Ring – The battery cap O-Ring will provide the night vision binocular battery port with a proper watertight seal. The battery cap O-Ring should be regularly lubricated by the user using silicone-based lubricant to reduce wear of the O-Ring. If the O-Ring becomes worn or damaged please contact Nocturn Industries for a replacement.

18. Objective Lens – The objective lens is the front lens of the night vision binocular device. The objective lens is responsible for the optical focus of the night vision binocular.

Trouble Shooting

No Power

Battery - If the night vision binocular is not powering on start by ensuring there is a fresh CR123A battery in the device in the proper positive negative orientation. Ensure that the night vision binocular pods are in the in (down) position within the range where the independent on feature will be activated.

Battery Cap – If the night vision device will not power on ensure that the battery cap is tightened appropriately to make proper contact. Ensure that the night vision binocular pods are in the in (down) position within the range where the independent on feature will be activated.

O-Ring – If the night vision binocular will not power on try removing the O-Ring of the battery cap and re-install the battery cap without the O-Ring, tighten the battery cap to appropriate tightness and try to power the unit on. Ensure that the night vision binocular pods are in the in (down) position within the range where the independent on feature will be activated.

Can't Focus

Infinity Stop Ring – Make sure that the infinity stop ring has not unthreaded or moved in any way. If it is suspected that the infinity stop ring has been moved start by unscrewing the small set screw or screws that fastens the infinity stop ring in place. Thread the infinity lock ring all the way in against the pod of the night vision binocular and then look through the night vision binocular as you adjust your focus distance. Refer to front diagram for information on how to reset infinity stop ring in place.

I.P.D. Stops are loose

I.P.D. Screw – Rotate (articulate) the pod in and out (up/down) to evaluate whether the I.P.D. friction lock system has an appropriate amount of stopping force when I.P.D. stopping mechanism reaches the stopping point of the tooth on the tensioner plate. If it is found that the I.P.D. friction lock stopping force is too weak it is recommended that your unit be returned for service. If the user wishes to perform the service the screw must be removed, thread chased for cleanliness (this is crucial) Blue 243 Loctite and Loctite SF7471 primer must be applied properly and the screw, washer, and I.P.D. mechanism must be re assembled and screwed to a torque of 8.5-inch pounds. Pods must not be rotated in any way until Loctite has fully cured.