

# MO-4



*u s e r ' s   g u i d e*

**AMERICAN  
TECHNOLOGIES  
NETWORK  
CORP.**



ON/OFF indicator light

IR indicator light



Computerized proximity sensor

±5 Diopter

Digital control for Proximity Sensor

3V lithium battery

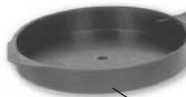


Power button

Digital control for IR

Built-in infra-red (IR) illuminator

90mm F 1.2 lens for maximum clarity



Objective lens protective cover



Camera adapter



Doublerr

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# APPLICATION

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The Night vision Monocular is a complex optoelectronic system for individual use. The device consists of the objective lens assembly, eyepiece and the body. The body contains a 1st (MO-41) or 2nd Gen. + (MO-42) image intensifier tube assembly with an integrated high voltage power source and the three volt battery housing. When installing the battery one should keep in mind that the polarity of the battery should coincide with the diagram on the body next to the battery housing cap.

Objective lens protective cover is intended to protect the objective lens from dust and scratches. It will also act as a daylight filter, allowing you to test the scope in daylight or other bright light situations. The pin-hole in the center of the protective cover allows the user to check the operation ability of the device in daylight conditions.

**NOTE: Do not test the scope in daylight conditions even with the daylight filter/lens cap on for more than ten (10) minutes.**

## SMART DIGITAL TECHNOLOGY

Smart Total Darkness Technology finally provides the user total control in the hi-tech industry of Night Vision. The Smart Series Night Vision scopes have been designed according to the latest computer technology.

Onboard computer systems identify the users intention of looking through the scope. When the scope is brought to the user's eye, the scope automatically turn on. When removed from the eye the scope turns off (you must engage the proximity sensor for this feature to work). The user will never have to worry about turning his or her scope on or off. Smart series scopes automatically sense when they are no longer used and will shut off and enter their sleep mode. All the controls and buttons are digital. Even if your batteries are low, don't worry the smart series will let you know. Our MO-4 scope has a 3-button digital control panel that allows the user to easily engage the main power, Infra-red illuminator and the proximity sensor. Color coded LEDs let you know the mode of operation you are using.

1. ON/OFF indicator light – when power is ON the LED is green.
2. When the proximity sensor is activated the LED will change to red.
3. When IR is ON the IR LED is orange.

**NOTE, FOR MO-41:** *You may notice a persistent green glow for up to five (5) minutes after you have turned the MO-41 off. This is normal for the 1st Gen. light intensifier tube.*

## FOCUSING

To focus the MO-4 first you will need to adjust the diopter. Simply turn the diopter clockwise until it stops. Then, while looking through the diopter at a subject, slowly turn the diopter back counter clockwise until the grain in the image is sharp.

**NOTE:** *We suggest that you focus the diopter during daylight with the filter on.*

Next. When you are in low-light conditions and the daylight filter is off, you may focus the front lens to receive a sharp image, the diopter should not be adjusted.

**NOTE:** *The front lens should be readjusted as you view objects at different distances.*

## INFRA-RED (IR) ILLUMINATION

Infra-red illuminators, or IR illuminators, are common in night vision. The IR light greatly enhances the performance of the MO-4 while remaining almost totally invisible to the naked eye. The IR illuminator on the MO-4 is located to the side of the battery compartment.

To turn the IR on push the IR button and you will see an orange indicator light come on. It is important to remember that the IR illuminator is simply an infra red light source, and like any light source it may loose its effectiveness over a great distance.

You may desire a different field of coverage from the IR illuminator, if so, the beam is focus-able. By turning the lens of the IR illuminator you will slightly change the beam width.

**NOTE:** The IR will automatically turn off when the unit's main power switch is turned to the OFF position.

## LOW BATTERY INDICATOR

The low battery indicator is another feature that is programmed into your "Smart" scope. If the batteries start losing voltage LED "B" will start to pulse, it is time to change your batteries.

## USING THE CAMERA ADAPTER (OPTIONAL)

To use your MO-4 with a 35mm camera or camcorder you will need the following:

- 1) If you plan to use a camcorder then your camcorder must have a MACRO feature. Most modern camcorders today have a MACRO feature built-in.
- 2) If you plan to use a 35mm camera you will need a MACRO lens. If you don't have one we advise that you contact your local camera store.
- 3) You may or may not need a STEP-UP or STEP-DOWN ring in order to adapt the camera adapter to your lens.

**NOTE:** The camera adapter comes with 37-mm and 52-mm threads. If you need other sizes your local camera store should be able to help.

- Remove the rubber eye-cup from the MO-4
- Screw the camera adapter onto the front of the lens on your Video camera's lens or your 35-mm camera's lens.
- Loosen the three set screws on the camera adapter.
- Place the camera adapter over the MO-4's eyepiece.
- Tighten the three set screws to fit snugly to the MO-4 eyepiece
- You may need to focus the 35-mm camera or video camera in combination with the MO-4 in order to get the sharpest image possible.
- We suggest that you find an open space to work in. Focus the MO-4 so that the scene is at its sharpest. For the best results you should disable the auto focus (if any) on either the 35mm camera or the video camera and manually focus the 35-mm camera or the video camera. Once the image is in sharp, then simply adjust the MO-4 front lens to change the focus.
- An important part to remember is that you are not taking a picture of an object that is far away from you, but you are actually taking a picture of a phosphorous screen of the MO-4 that is only 2-3 inches away.



## USING THE 6X DOUBLER: (OPTIONAL)

- Unscrew 90 mm lens off the body of the MO-4 ( make sure that the unit is turned off).
- Screw the doubler into the body of the MO-4 where the 90 mm lens is removed.
- Screw the 90-mm lens into the doubler.

**NOTE:** When attaching the doubler do not be afraid to use a little force.

# OPERATION

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- Take the monocular out of the case.
- Install the batteries into the housing with the polarity order as shown on the scope. Battery type: 3 Volt Lithium, #CR123A
- Press the button marked -/O to turn unit on with the protective lens cover still attached to the lens. **Do not turn unit on in the daytime without the protective lens cap on.** You should see a green glow in the eyepiece.
- Observe the scene and adjust the diopter for the optimal image clarity.
- You may now enter a dark environment or simply shut the lights off in order to darken the room.
- Next, remove the lens cap/daylight filter. Adjust the front lens for distance focus. You should not have to readjust the diopter.
- The unit will turn on and off automatically when you bring it to or take away from your eye. This is done by activating the proximity sensor. To activate the proximity sensor push the digital control marked "A". You will notice the green LED change to red when the sensor is on.
- In order to assure the proper functioning of the proximity sensor, make sure that the protective glass surface of the sensor is always clean.
- To increase battery life the LED diodes will go off after 10 seconds.
- You will need to focus the objective lens for different distances.
- The handle on the MO-4 swivels easily from left to right allowing comfort of use for both righties and lefties. To move the handle loosen the front lens and the eyepiece. The handle then will be adjustable for left- or right-hand use.
- Take your time learning about your "smart" scope. It will take practice to properly use the device. As you use this scope you will be able to improve your speed of focusing, as well as sharpness of image.
- Have fun and enjoy.

# CLEANING THE EYEPIECE

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You may need to clean the eyepiece of the MO-4 from time to time in order to guarantee top performance. When you receive your MO-4 you should check for dust on the eyepiece of the unit.

First you will need to remove the eyepiece. To remove the eyepiece you will need to initially loosen 2 set screws that can be found on the base. Then unscrew the eyepiece counter-clockwise to remove it.

**NOTE:** *You do not have to remove the set screws completely, they are very small and easy to misplace.*

**CAUTION:** *Use only Photographic lens cleaning tissue on these surfaces. Be careful not to scratch, or smudge any of these surfaces. When using compressed air to blow dust away, make sure to avoid inverting the can while spraying. This may cause frozen propellant to exit the can, which can result in serious damage problems of the glass and phosphor screen.*

# STORAGE AND CARE

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- If the device is not to be used for an extended period of time (more than 10 days) remove the battery.
- Avoid touching lenses. If Fingerprints or traces of dirt or dust appear clean surface with a Photographic lens cleaning tissue.
- Keep the lens cap/daylight filter on when not in use.
- The MO-4 is not harmful to the user or the environment.

- Do not disassemble except to clean the front lens and eyepiece, install the 6x Doubler or any other “C” mount lens: **it will void your warranty.**
- Evaluate the scopes function by looking through it in a lit environment with the daylight filter lens cap on. Never use in daylight without the daylight filter lens.
- **Never point the MO-4 at a bright light source.**
- Adverse atmospheric conditions such as fog, smog or haze and a lack of ambient light (moon or starlight) may diminish the effective viewing distance.

## TROUBLESHOOTING

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**Q:** Flashes, flickers or clicking occur while operating

**S:** If it occurs within the first five minutes of inserting new batteries it is normal and the device will resume normal operation soon thereafter. If it occurs for more than 10 minutes contact ATN for service instructions.

**Q:** Dark spots on screen.

**S:** These are either cosmetic blemishes in the intensifier tube or dust particles. Dust particles can be cleaned following instructions in “Cleaning Eyepiece” section.

**Q:** Screen becomes darker than in previous use.

**S:** Replace batteries. If the problem persists contact your dealer or other authorized service representative for service instructions.

**Q:** Image not clear.

**S:** Adjust objective lens and/or the eyepiece. Turn on IR.

## FEATURES

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- Great for hunting, camping, boating or surveillance
- Total darkness technology
- Automatic brightness control
- Built-in IR illuminator
- Manual focus
- Adjustable eyepiece
- High res. 1st+ or 2nd Gen+ intensifier tube
- Rugged and versatile design
- Light weight and comfortable
- Water and dust resistant
- Smart Technology - see description.
- Superb 3X lens system
- Optional Doubler allows 6x magnification.
- Soft case
- Two-year warranty (optional extended Warranty)

## SPECIFICATIONS

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Magnification ..... 3x (Optional 6x)  
 Intensifier Tube. 1st+ or 2nd Gen+; high res.  
 Lens System..... 6 (9) elements; F1. 2, 90mm  
 Field of View ..... 16°  
 Resolution ..... 40 lp/mm  
 Minimum Light Req ..... 5x10<sup>-3</sup> lux

Range of Focus ..... 5' to ∞  
 Power Supply ..... two 3 volt lithium  
 Battery Life ..... 10-20 hours  
 Operating Temperatures .... -30°F to +110°F  
 Dimensions ..... 200mm x 60mm x 60mm

## 2 YEAR PRODUCT WARRANTY

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This product is guaranteed to be free from manufacturing defects in material and workmanship under normal use for a period of 2 (two) years from the date of purchase. In the event a defect that is covered by the foregoing warranty occurs during the applicable period stated above, ATN, at its option, will either repair or replace the product, and such action on the part of ATN shall be the full extent of ATN's liability, and the Customer's sole and exclusive remedy. This warranty does not cover a product (a) used in other than its normal and customary manner; (b) subjected to misuse; (c) subjected to alterations, modifications or repairs by the Customer or by any party other than ATN without prior written consent of ATN; (d) special order or "close-out" merchandise or merchandise sold "as-is" by either ATN or the ATN dealer; or (e) merchandise that has been discontinued by the manufacturer and either parts or replacement units are not available due to reasons beyond the control of ATN. ATN shall not be responsible for any defects or damage that in ATN's opinion is a result from the mishandling, abuse, misuse, improper storage or improper operation, including use in conjunction with equipment which is electrically or mechanically incompatible with or of inferior quality to the product, as well as failure to maintain the environmental conditions specified by the manufacturer. **CUSTOMER IS HEREBY NOTIFIED THAT OPERATION OF THE EQUIPMENT DURING DAYLIGHT HOURS OR UNDER ANY EXCESSIVE LIGHT CONDITIONS MAY PERMANENTLY DAMAGE THE INTERNAL COMPONENTS OF THE UNIT AND SAID DAMAGE WILL NOT BE COVERED UNDER THIS WARRANTY.** This warranty is extended only to the original purchaser. Any breach of this warranty shall be waived unless the customer notifies ATN at the address noted below within the applicable warranty period.

The customer understands and agrees that except for the foregoing warranty, no other warranties written or oral, statutory, expressed or implied, including any implied warranty of merchantability or fitness for a particular purpose, shall apply to the product. All such implied warranties are hereby and expressly disclaimed.

## LIMITATION OF LIABILITY

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ATN will not be liable for any claims, actions, suits, proceedings, costs, expenses, damages or liabilities arising out of the use of this product. Operation and use of the product are the sole responsibility of the Customer. ATN's sole undertaking is limited to providing the products and services outlined herein in accordance with the terms and conditions of this Agreement. The provision of products sold and services performed by ATN to the Customer shall not be interpreted, construed, or regarded, either expressly or implied, as being for the benefit of or creating any obligation toward any third party of legal entity outside ATN and the Customer; ATN's obligations under this Agreement extend solely to the Customer. **ATN's liability hereunder for damages, regardless of the form or action, shall not exceed the fees or other charges paid to ATN by the customer or customer's dealer. ATN shall not, in any event, be liable for special, indirect, incidental, or consequential damages, including, but not limited to, lost income, lost revenue, or lost profit, whether such damages were foreseeable or not at the time of purchase, and whether or not such damages arise out of a breach of warranty, a breach of agreement, negligence, strict liability or any other theory of liability.**

## PRODUCT WARRANTY REGISTRATION

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In order to validate the warranty on your product, ATN must receive a completed Product Warranty Registration Card for each unit. Please complete the form below and immediately mail it to our Service Center: ATN Corporation, 20 South Linden Ave., Suite 1B, South San Francisco CA 94080. Products qualifying for warranty repair will be either repaired or replaced within 10 business days of receipt of merchandise unless the customer is notified otherwise.

## OBTAINING WARRANTY SERVICE

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To obtain warranty service on your unit, take or send the product, postage paid, with a copy of your sales receipt to our service center, ATN Corporation at the address noted above. All merchandise must be fully insured with the correct postage; ATN will not be responsible for improper postage, or missing or damaged merchandise during shipment.



For customer service and technical support, please contact  
American Technologies Network Corp.

**North American Office**

20 S. Linden Ave. Suite 1B, South San Francisco, CA 94080  
phone: 800-910-2862, 650-875-0130; fax: 650-875-0129

**European Office**

phone: 44(0)870-0111286, fax: 44(0) 845-3349142

The following countries can use our  
**toll free number 00 800 9102-8620**

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