NEWCON™ OPTIK

OPERATION MANUAL

NIGHT VISION MONOCULAR

STARGATE M

105 Sparks Ave., Toronto, ON, M2H 2S5, Canada

IMPORTANT INFORMATION

Read prior to activation

You have just purchased a complicated electronic device. To operate it properly, please read this manual carefully. Here are some common Precautions that must be noted.

- **NEVER** expose the opened objective lens of an active unit in daylight. At daytime objective lens must be covered by caps. There is a tiny hole in the cap to provide enough light for day time operation.
- **NEVER** aim active unit at intense light sources (i.e. lights, headlamps, campfires, the Moon, etc.)
- **NEVER** reverse the polarity of a battery
- **NEVER** disassemble the unit
- **ALWAYS** remove batteries when not in use for a long period
- **ALWAYS** keep the objective lens covered when not in use
- **ALWAYS** store in a warm dry place when not in use

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Thank you for purchasing Stargate M night vision device. Please read all the instructions carefully before using.

1. Overview

Stargate M night vision scope is a sophisticated optical-electronic observation device designed to allow observations of personnel and orientation in nighttime conditions. The unit utilizes an image intensifier tube, which amplifies available moonlight, starlight or artificial light.

The Stargate M utilizes piezo crystals as a source of high voltage power for the image intensifier tube. The unit does not need any batteries to operate. An additional infrared illuminator is powered by a battery.

Warning!

After keeping the device at temperature lower than -25°C (-13°F) it must be warmed up to an ambient temperature of -20°C (-4°F) to +40°C (104°F) during 2-3 hours prior to operation.

Stargate M is a precision optical instrument equipped with electronics. Therefore, it should be handled with due care:

- Keep your device away from direct sunlight, impacts, dust, moisture, and sharp changes of temperature.

- Do not touch the optical surfaces with fingers. Doing so may damage the anti-reflection coating.
- Clean optical surfaces only with professional camera lens cleaning supplies.
- Clean the exterior of the device with a soft clean cloth.
- Do not take the cover off the lens if not necessary.
- Keep away from heating appliances and central heating.
- Do not apply excessive power to lens assembly, agile elements and thread connections.
- Due to considerable optical magnification of the eyepiece some small structures inside the tube coating in the form of dark and/or white points may be seen in the field of view; this does not affect the capabilities of the device;
- The device resolution may change from the center towards the perimeter of the field of view. This is an inherent feature of the image tube type utilized in the device.

Features

- One stage image intensifier tube with multi alkaline photocathode provides image intensifier tube gain of no less than 500 times and thus ensures observation at ¼ moon and better light conditions.

- AP 12 infrared illuminator enables observation in complete darkness
- Stargate M is intended for use within the range of illumination from 5/1000 lux to 1 lux.
- High quality wide angle lens.
- The internal focusing mechanism provides a wide focusing range.
- Soft rubber eye cap blocks disturbing lateral light and protects from lens from occasional impacts.
- Original compact design and ergonomic shape make the device comfortable to hold with one hand.

2. Delivery Set

Stargate M is supplied with the following components:

	Quantity
Stargate M	1
AP 12 IR illuminator	1
Neck strap	1
Case	1
Manual	1
Warranty Registration Card	1

3. Specifications

Magnification, x	2
Field of view, degrees, min	20º
Dioptric compensation	±4
Focusing range, m	3-∞
Lens focal length, mm	35
Eyepiece focal length, mm	9.5
Power Supply:	
Monocular	needs no batteries
IR illuminator	CR 123
Environmental conditions:	
Operation temperature range	-25ºC to +40ºC
Relative humidity of no more than	80% at 20ºC
Dimensions, mm	160x60x65
Weight, kg	0.450

NOTE: As the design is being continuously improved some descriptions may differ from those given above.

4. Design

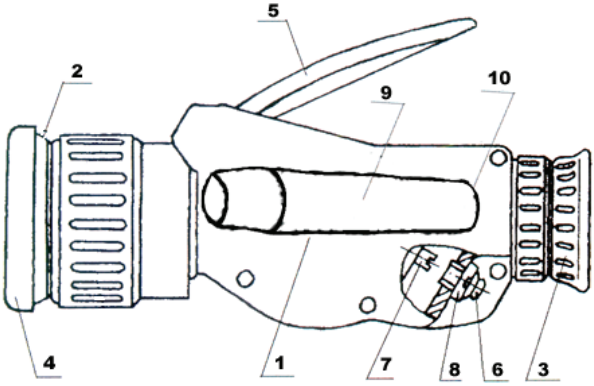


Figure 1.

1 - Housing
2 - Lens
3 - Eyepiece
4 - Lens Cover
5 - Activation lever
6 - Screw Cover
7 - Pressure Adjustment Screw
8 - Bushing
9- Infrared Illuminator
10 - IR illuminator battery house cover

5. Operation Instructions

Never operate your night vision device at daylight without the lens cover on. Never direct the lens towards bright light.

5.1. Operation

Once in dark environment, take off the lens caps (4). Operation without the lens cover on is acceptable only at the illumination level below 1 lux. At such illumination a person with normal vision can read a newspaper with difficulty after 5-10 minutes of eyes' adaptation.

Check the functioning of the device by switching it on: push activation lever (5) towards the body of the unit and look through the eyepiece (3). You should see a greenish-lit screen. Rotate eyepiece (3) to focus. In order to focus on a different distance, rotate the objective lens (2).

5.2. Lever

Proper operation of the activation lever: Push it down and hold in this position. This should provide 30-60 seconds of operation. Once the screen begins to dim, boost the image by releasing the handle and pushing it down again after a few seconds (not immediately!).

Pumping the lever up and down rapidly will deactivate the power mechanism for 15-30 minutes.

Doing so repeatedly will damage to the activation mechanism.

5.3. Infrared illuminator

When conditions are very dark, use the AP 12 infrared illuminator (9). Before usage, install a battery, observing the polarity.

5.4. Maintenance

Maintenance includes only cleaning of parts if necessary.

Clean the lens and eyepiece optical surfaces with a soft cloth dampened with “lens cleaner” obtained from any camera store. Clean the lens surface carefully with circular movements starting from the center.

5.5. Boosting image brightness

After a long period of use the brightness of the screen may decline. To regain normal brightness you should turn the pressure adjustment screw (7) a quarter (¼) of a turn clockwise. To reach the adjustment screw (7), first remove the screw cover (6) and the strap, than unscrew the bushing (8). This will expose an opening into the housing, through which one can reach the adjustment screw.

6. Troubleshooting

6.1. The scope does not work.

Push the lever all the way. Do not release it.

6.2. The image does not appear in focus.

Bring the inspected object to the center of the image. Turning the eyepiece focusing lever (3) adjust to achieve the clearest image on the screen. Then obtain the most clear-cut image of the object.

The image doesn't appear in focus. Bring the inspected object, if the view still does not seem in focus, clean the lenses; they could be foggy or dusty.

6.3. Image flashes

It is normal for the unit to flash within the first 2 minutes of activation.

Continued flashing may be caused by bright light environment (even with the cap closed).

6.4. Condensation accumulates on the parts.

When the unit is brought from cold into a warm environment, it has to warm up for up to 5 hours. Only then it is allowed to turn it ON again.

6.5. Visibility decreases and / or disappears.

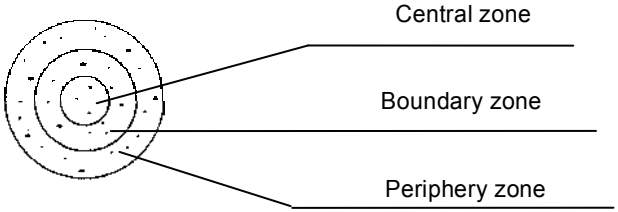
Bright light sources (moon, projectors or headlights) may result in visibility degradation or even complete disappearance. If this happens move the scope away from the light source immediately. The image should be restored in within 2 minutes.

Poor atmospheric conditions such as fog, haze or extremely dark environments, will decrease the visibility distance as well.

6.6. Visible spots

Image quality of the object, which is being observed when an image intensifier is functioning, depends mainly on operating characteristics of this image intensifier.

Due to this fact black spots, which are inherent in the image intensifier, may be seen in the field of view of a viewing device. Field of view is shown below.



Acceptable defects, which may be seen in the field of viewing device, are given in the table below.

Type of black spots	Zone	Size of black spots, mm	Number of spots
Immovable	Central (circle of diameter 5.5 mm)	Up to 0.073 From 0.073 to 0.150 From 0.150 to 0.294	Not limited 5 1
	Boundary (circle of diameter 5.5-9.0 mm)	From 0.073 to 0.150 From 0.150 to 0.294 From 0.294 to 0.400	10 3 1
	Periphery (circle of diameter 9.0-11.0 mm)	Not limited	Not limited
Moving	Entire field (circle of diameter 11.0 mm)	From 0.150 to 0.294	1

7. Warranty

NEWCON warrants this product against defects in material and workmanship for one year from the date of the original purchase. Longer warranty is available, subject to the terms of the specific sales contract. Should your Newcon product prove to be defective during this period, please deliver the product securely packaged in its original container or an equivalent, along with the proof of the original purchase date, to your Newcon Dealer.

Newcon will repair (or at its option replace with the same or comparable model), the product or part thereof, which, on inspection by Newcon, is found to be defective in materials or workmanship**.**

*What This **Warranty Does Not Cover**:*

NEWCON is not responsible for warranty service should the product fail as a result of improper maintenance, misuse, abuse, improper installation, neglect, damage caused by disasters such as fire, flooding, lightning, improper power supply, or service other than by a NEWCON Authorized Service.

Postage, insurance, and shipping costs incurred while presenting your NEWCON product for warranty service are your responsibility.

If shipping from North America, please, include a cheque or money order payable to NEWCON OPTIK for the amount of $15.00 to cover handling and return shipping.

8. Customer Support

Should you experience any difficulties with your NEWCON OPTIK product, consult the enclosed manual. If the problem remains unresolved, contact our customer support department at (416) 663-6963 or toll free at 1-877-368-6666. Our operating hours are 9am-5pm, Monday - Friday, Eastern Standard Time. At no time should equipment be

sent back to Newcon without following the instructions of our technical support department.

NEWCON OPTIK accepts no responsibility for unauthorized returns.

To locate NEWCON Authorized Dealer call:

Tel: (416) 663-6963 Fax: (416) 663-9065

Email: newconsales@newcon-optik.com

Web: www.newcon-optik.com

The defective products should be shipped to:

From the USA only:

2498 Superior Ave. Cleveland, OH 44114

From all other countries:

105 Sparks Ave., Toronto, ON
M2H 2S5, CANADA

9. Acceptance Certificate

NIGHT VISION DEVICE Stargate M

Serial number: _____

Complies with all technical specifications and has passed the inspection.

Date of production:

_____

Quality Inspector:

_____

Quality Assurance Seal

NEWCON OPTIK™ Printed in Canada