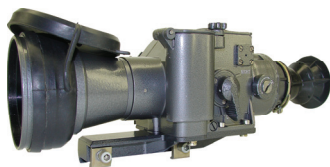


Operation Manual



East European Mount



Picatinny Mount

NVS 10MG
DAY/NIGHT VISION SCOPE

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 (if operating in night mode). 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
- **NEVER** connect the unit to external power sources
- **ALWAYS** remove batteries when not in use for a long period
- **ALWAYS** keep the objective lenses covered when not in use
- **ALWAYS** store in a warm dry place when not in use

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1. DESCRIPTION

1.1 The integrated day/night riflescope **NVS 10MG** is a day/night sight (hereinafter referred to as the sight) with the set of accessories. The sight is intended for aimed firing during daylight and at night, using large variety of weapons with side mounting or weaver mounting rail.

1.2 The sight provides detection, recognition, observation of a target and aiming firing in daylight and at night.

1.3 The operation temperature range of the sight is from -55 to +55°C and relative humidity up to 98% at temperature +25°C.

Thank you for purchasing NVS 10 MG

Please read all the instructions carefully prior to use.

Failure to follow the instructions may void the warranty.

2. DELIVERY SET

	Quantity
NVS 10MG	1
Weaver or side fail mount	1
Wrench / Screwdriver	1
Battery	2
Allen key	1
Battery control module	1
Soft cloth	1
Bag	1
Rubber eye guard	1
Case	1
Operational manual	1
Disguise cover	1

3. SPECIFICATIONS

Magnification	4x \pm 0.2
Field of view	9°
Objective lens focal length/F	108mm/F1.5
Objective lens diameter, mm	72
Focus range, m	50 – ∞
Eyepiece focal length, mm	27.4
Eyepiece relief distance, mm	40
Dioptic adj. relative to reticle	Fixed -0.5 to -1 D
Windage/Elevation adjustment	\pm 34 MoA*
Windage/Elevation step	0.7 MoA *
Man viewing distance, m	>500
Vehicle viewing distance, m	>1500
Image Intensifier Tube	18 mm, Gen 2+ or 3
Tube sensitivity, μ A/lm	>500
Tube resolution lp/mm	>45
Power supply	3V (2 x AA)
Battery life, up to	60 hours
Operations temperature	-55°C to +55°C
Storage temperature	-55°C to +70°C
Waterproof construction	Yes
Dimensions (w/o mount), mm	255x88x80
Weight (w/o batteries), kg	1.600

*Minute of Angle

The unit works under voltage from 2 to 3 Volts. To test the battery voltage, use the supplied battery control module.

4. DESIGN

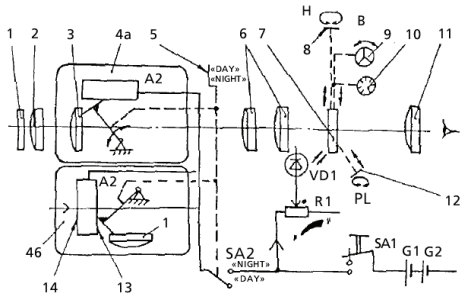


Figure 1

1 – Flight Filter

3 – Collective lens

4b – Switching mechanism in the position “NIGHT”

6 – Internal lenses

8 – Windage adjustment screw

10 – Elevation scale

12 – Direction adjustment screw

14 – Photocathode of image intensifier

G1, G2 – Batteries

SA1 – Switch

VD1 – Light diode

2 – Objective lens

4a – Switching mechanism in the position “DAY”

5 – Handle

7 – Reticle

9 – Elevation adjustment wheel

11 – Eyepiece

13 – Image intensifier screen

A2 – Image intensifier

R1 – Resistor

SA – Micro switch

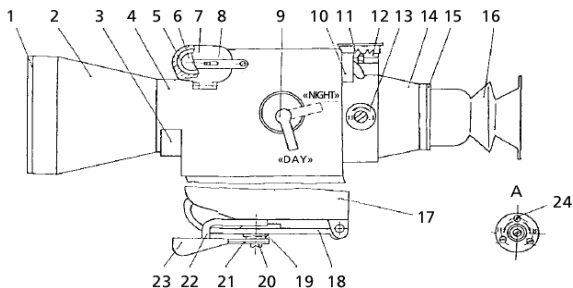


Figure 2

- | | |
|---|---|
| 1 – Light filter | 2 – Objective |
| 3 – Hand wheel for of reticle
brightness | 4 – Switching mechanism |
| 5 – Battery pack | 6 – Battery |
| 7 – Battery compartment
cover | 8 – Latch |
| 9 – Handle DAY/ NIGHT | 10 – Switch ON / OFF |
| 11 – Elevation scale | 12 – Elevation adjustment
hand wheel |
| 13 – Windage adjustment
screw | 14 – Eyepiece |
| 15 – Clutch | 16 – Eyepiece Rubber |
| 17 – Side mount | 18 – Mount |
| 19 – Washer | 20 – Clutching screw |
| 21 – Latch | 22 – Lever |
| 23 – Handle | |

WARNING!

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

The functional device scheme is given on the figure 1 (see the Exhibit A).

In daylight, the handle (5) is set into the position DAY, setting the switching mechanism into position (4a). Light filter (1) must be removed from the objective (2). Visible image that is formed by the objective (2) is projected onto the reticle (7) through the collective lens (3) and lens system (6). It can be viewed through the eyepiece (11) together with the aiming marks.

If the aiming marks on the reticle (7) are not seen well, turn the switch SA1 into ON position. The light diode VD1 illuminates the reticle (7). You can adjust the brightness of the aiming marks by the resistor R1.

During night and in dusk turn the handle (5) into position NIGHT. This sets the switching mechanism into position (4b), when the image intensifier A2 replaces the lens (3) in the aiming channel. Internal micro switcher SA2 is connected mechanically with the handle (5).

Now, when you turn the switch SA1 into ON position, the power from batteries G1 and G2 is applied to the image intensifier A2. Visible image from the image intensifier screen (13) is projected onto the reticle (7) and is viewed through the eyepiece (11) together with the aiming marks.

In twilight, the light filter (1) should be on the objective (2) for image intensifier protection from light overloads.

The sight consists of following components: objective (2) (figure 2) with mounted light filter (1), switching mechanism (4), eyepiece (14), and interchangeable mount (17) with fixing mechanism.

The rubber eye shade (16) eases the eye orientation relatively to sight eye relief, and protects the eye from recoil. It is fixed on the eyepiece (14) with the clutch (15).

Two rechargeable or non-rechargeable batteries of AA type are organized in a battery pack (5), which is placed into the battery compartment (6) and closed by cover (7). To fix the cover (7), turn the latch (8) counter clockwise.

The sight has following controls (see figure 2):

- the ON/OFF switch (10) for turning on the reticle illumination and image intensifier (SA1 on figure 1);
- the DAY/NIGHT handle (9) for setting the switching mechanism (4) into the day or night operating mode;
- the hand wheel (3) for smooth brightness adjustment of the reticle;
- the hand wheel (12) for elevation adjustment;
- the screw (13) for windage adjustment.

5. TOOLS AND ACCESSORIES

- Battery control module should be used for the field inspection of the batteries. It has four LEDs on the front panel. Numbers “1.1”, “1.2”, “1.3”, “1.4”, which are marked near the LEDs, indicate battery voltage in Volts. The accuracy of voltage measurement is 0.1 V.
- The wrench key is designated for turning the windage screw (13).
- The protected rubber eye shade from the accessories kit is used instead of the standard eye shade (16). It is designed for night work under conditions that require high level of camouflage. It hides the green light spot on the shooter’s face, when the shooter is not aiming.
- The soft cloth is intended for cleaning of the external surfaces of optical components, contacts, and battery control module.
- The bag is intended for packing up the sight and its protection while carrying and transporting.
- The cover is used when the sight is transported being mounted on a weapon.
- The accessories are stored inside the cover.

6. GENERAL INFORMATION

6.1 Precautions

NEVER switch the handle day/night into the night position in a daytime without the light filter on the objective;

NEVER aim the sight to the bright sources of light (flares, glowing automotive head lamp) when it is on;

NEVER touch the optical components by hands. Dust, grease and dirt from the optical surfaces must be removed with the napkin;

NEVER short the circuit between the batteries and metallic parts of the body;

NEVER use sight not fixed firmly on the weapon;

NEVER press the eye shade too intensively to avoid the recoil impact;

ALWAYS work with light filter in twilight;

ALWAYS turn off the sight when not in use in night time;

ALWAYS switch the handle day/night into the day position when the sight is not in use.

6.2 General Instructions

Prior to usage, be sure that you understand the sight controls and fixing mechanism.

If the sight was in storage, clean optical components with napkin. Remove the lubricant from the metallic surfaces.

In conditions that require high level of camouflage at night time, set the protected eyeshade on the sight in the following order:

- unclasp the clutch (15) (figure 2);
- take off the eyeshade (16) together with the clutch (15);
- put the eyeshade (16) into the case;
- take the protected eyeshade from the kit;
- put the clutch (15) on the eyeshade;
- fit the eyeshade to the eyepiece frame, stretching it a little;
- fasten the clutch.

If the outside temperature is below zero, keep the battery pack in the inner pocket of your clothes.

Check the voltage of the single battery in the following order:

- place the power supply into the battery control module, keeping the polarity right up;
- if any LED is on, the battery is charged, if it is not, then the battery is discharged and must be replaced.

Install the battery pack on the sight in the following order:

- place the ON/OFF switch into the position OFF;
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.

- Place the handle DAY/NIGHT (9) into the position DAY;
- Open the cover (7) by turning the latch (8) clockwise;
- Take out the battery pack (5);
- Place two charged batteries or two AA cells into the battery pack (5), observing the marked polarity;
- Locate the groove on the top side of the pack and place it into the compartment. The battery pack must slide effortlessly into the compartment;
- Close the cover (7) by turning the latch (8) counter clockwise.
- Put the light filter (1) on the objective (2). Set the DAY/NIGHT handle (9) into the position NIGHT, turn on the ON/OFF switch (10) and put the hand wheel (3) into the middle position. You should see the aiming marks on the yellow-green background;

- Turn off the switch (10).

In a daytime, set the DAY/NIGHT handle 9 into the position DAY, check that the switch (10) is in the OFF position, and then take the light filter (1) off the objective (2).

In twilight, put the light filter (1) on the objective (2), turn on the switch (10), and set the DAY/NIGHT handle 9 into the position NIGHT.

In the night, take the light filter (1) off the objective (2), turn on the switch (10), and set the DAY/NIGHT handle 9 into the position NIGHT.

6.3 Mounting on weapon (Side Mount)

Mount the sight on the weapon in the following order:

- Adjust the mounting seat groove (figure 2) with the mount type “dovetail”;
- Move the sight forward up to the stop and fix it, turning the handle (23) forward up to the total fixation on the mount (18). The sight should be screwed tightly to the mount;
- If the sight is not fixed tightly, take the sight off the weapon and regulate the clutch on the mount. For this purpose take off the latch (21) and assure that the handle (23) is placed on the number of jags that provide tight fixation of the sight, then place the latch (21) back on its place.

6.4 Mounting on weapon (Weaver Mount)

Mount the sight on the weapon in the following order:

- Using the allen key, fix tightly the mount on the sight;
- Adjust the sight with the mount on the rail;
- Using the allen key, fix tightly the mount on the weapon.

7. MAINTENANCE

Keep the sight clean from the dust and dirt while operating. Surfaces of the optical components should be always clean. Clean the glass surfaces with flannel or cotton wool saturated with ethanol or special cleaning solvent to remove grease.

- Wind a bit of a cotton wool at the end of wooden spatula;
- Wet cotton with the solvent;
- Wipe the glass by wetted cotton, not touching the frame;
- Change the wool to a dry piece and finish cleaning by circular motions from center to edge.

While cleaning, be careful to not afford the solvent to penetrate under the frame. This will lead to the dissolution of the jointing putty and breaking of the sight sealing.

To remove dirt from the battery pack contact plates, battery pack and from the contacts of the control module YK-battery use the similar procedure.

It is necessary to keep maintenance of the sight to provide constant readiness and reliability, increase durability, and remove the signs of untimely wear and tear and damage of the component units and parts.

8. TROUBLESHOOTING

Problem	Probable reasons	Possible solutions
There is no luminescence of image intensifier screen	Power supply is discharged	Check the battery charge with battery control module. Replace or recharge the battery if needed.
Area image is blurred and faint	The optics is dirty or covered with moisture	Wipe the eyepiece and objective surfaces with napkin.
Black spots of faults and damages, impeding the confident sight work, appeared in the field of view	Image intensifier is damaged by aiming at light source or turning the unit on in a daytime	Send the unit to an authorized service centre
There is no aiming marks fluorescence, when hand wheel "... " is set on the maximum brightness and the ON/OFF switch is in the position ON	1 The power supply is discharged 2 Emissive diode VD1 is defective (figure 1)	1 Check the battery charge with battery control module. Replace or recharge the battery if needed. 2 Send the unit to an authorized service centre

9. STORAGE

When preparing the unit for long-term storage, it is necessary to perform corrosion proofing with a special lubricant. Each 4 (four) years the lubricant should be renewed to fully protect the device from corrosion. During this operation the rest of previous lubricant coating should be removed, and all metal surfaces should be degreased by a cotton-wool cloth moistened in benzene. The new lubricant coating should be applied after degreasing with a brush. The plastic surfaces don't require anti-corrosion coating.

When preparing for long-term storage the NVS 10MGs received from the manufacturer or from the workshops, it is necessary to check the completeness of equipment by comparing what is available with the list of components in the this document. The reliability of NVS 10 MG attachments to weapon and parameters of adjustment by azimuth and elevation should be checked with NVS 10MG mounted on the weapon

When stored, the cases with NVS 10MGs should be placed on stands, shelves or in cupboards at a dry, heated and ventilated premise. The temperature at the premise shall be between +5C and +35C, relative humidity — not more than 55% at temperature +25C.

It's allowed to store the units in transportation case at temperatures up to 70C (158 F) for not more than 10 hours. It is unacceptable to place the NVS 10MGs on the floor, near stoves and windows that let through direct sunrays. Presence of acid and alkaline vapour, as well as of other aggressive admixtures in the air is unacceptable.

After a 4-year period of storage, it is necessary to perform thorough check-up of the NVS 10MGs' functionality.

10. 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.

11. 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:

US customers:

2498 Superior Ave. Cleveland, OH 44114

From all other countries:

105 Sparks Ave., Toronto, ON

M2H 2S5, CANADA

12. ACCEPTANCE CERTIFICATE

NIGHT VISION DEVICE NVS 10MG

NVS 10MG serial number:

Image Intensifier Tube serial number:

Complies with all technical specifications and has passed the inspection.

Date of production:

Quality Inspector:

Quality Assurance Seal

NEWCON OPTIK™

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