

User Manual

D-M2011 and D-M2021

A. Model Explanation

The 1st letter "D": the abbreviation of our brand Daking

The 2nd letter "M": Monocular

The 1st number 2: generation 2 (IIT grade)

The 2nd and 3rd number 01,02: the 1st and 2nd item we have released

The 4th number 1: magnification for objective lens

B. Product description

D-M2011 and D-M2021 are most popular mil-spec and versatile night vision system on the market. They can be used handheld, head mounted or helmet mounted for hands-free, weapons mounted for hunting or shooting or attached to a camera or camcorder for nighttime photography.

C. Kit includes

Night Vision Monocular, Flip-up head mount, Protective carrying bag, Instruction manual, Lens cleaning cloth, Warranty card, Desiccant

D. Features

- IP67 weatherproof: The device can work even under 1m water for 1 hour.
- Automatic shut off when flipped up: The device will turn off automatically when pushing a button on the side of mount and lifting the unit up until reaches in the top position. Push the same button to lower monocular to the viewing position, then the device will turn on for continuation of operation.
- No power consumption when in standby: It means no power consumption in case you forget to remove the battery for some days.
- Embedded spring in battery's cap: It makes screwing the cap easier and better protect the spring and contact with the battery.
- Fully adjustable head mount: The head mount can be adjusted according to head size.
- Mil-spec multi-coated optic: Multi antireflection film can restrain the reflex of lens, which can reduce the loss of light so more light can go through the lens to get a sharp image.
- Automatic brightness control: When the ambient light changes, the brightness of the image detected will keep the same to insure a stable viewing effect and also to protect users' eyesight.

●Bright source protection: The device will shut off automatically in 10 seconds to avoid the damage of the image intensifier tube when the ambient light exceeds 40 Lux.

E. Specifications

Model	D-M2011	D-M2021
IIT	Gen2+	Gen2+
Resolution (lp/mm)	45-64	45-64
Photocathode type	S25	S25
S/N (dB)	12-21	12-21
Luminous sensitivity ($\mu\text{A/lm}$)	450-600	450-600
MTTF (hrs)	10,000	10,000
Magnification	1x	1x
FOV (deg)	40	40
Detection distance (m)	220-240	250-280
Diopter (deg)	+5/-5	+5/-5
Lens system	F1.2, 25.8mm	F1.2, 25.8mm
Range of focus (m)	0.25-- ∞	0.25-- ∞
Dimensions (mm)	140x74x56	140x76x56
Weight (g)	365	366
Power supply (v)	2.0-4.2V	2.0-4.2V
Battery type (v)	1 3V CR123A lithium battery	1 3V CR123A lithium battery
Battery life (hrs)	80(w/o IR) 40(w IR)	80(w/o IR) 40(w IR)
Operating temperature($^{\circ}\text{C}$)	-40/+40	-40/+40
Environmental rating	IP67	IP67

F. Mechanical parts code and name on D-M2011 (push button switch)



G. Device operating instructions on D-M2011 (push button switch)

1. Put one 3V CR-123 lithium battery observing the polarity indications on the battery compartment (2) surface.
2. Remove the protective cover (4) when it's used at night or in low light condition. **NOTE:** To protect the image intensifier tube, keep the lens cap on the objective lens when the

monocular is not in use or when checked out in daylight conditions. You might test the device through the pinhole in the center of protective cover (4) and it shouldn't last more than 10 minutes.

3. Turn on the device by pressing power button (1). After this, you can observe a greenish-lit screen through the eyepiece (5). It means that the device is working normally. To activate the IR illuminator (8) by pressing IR switch (10) when the monocular is working in the conditions of extreme low light or total darkness. A red light emits from IR illuminator (9) to indicate that the IR illuminator is functioning. **NOTE:** The light from the illuminator can be detected by others that are using night vision devices.
4. Focus the objective lens (3) by rotating the objective lens ring for sharper image of viewed object. Adjust eyepiece (5) by rotating the eyepiece ring for sharper image of intensifier screen. Repeat above two steps for 3 times, then you might gain the sharpest image.
5. The light detector (9) can detect the surrounding illuminance, the device will be shut off automatically when the ambient light exceeds 40 Lux in 10 seconds.
6. When you finish observing, A short press on power button (1) to turn off the device.

H. Mechanical parts code and name on D-M2021 (rotary switch)



I. Device operating instructions on D-M2021 (rotary switch)

1. Put one 3V CR-123 lithium battery observing the polarity indications on the battery compartment (2) surface.
2. Remove the protective cover (4) when it's used at night or in low light condition. **NOTE:** To protect the image intensifier tube, keep the lens cap on the objective lens when the monocular is not in use or when checked out in daylight conditions. You might test the

device through the pinhole in the center of protective cover (4) and it shouldn't last more than 10 minutes.

3. Turn on the device by pulling out the operation button (1) a little bit and moving it to ON. After this, you can observe the greenish-lit screen through the eyepiece (5). It means that the device is working normally. Activate the IR illuminator by another pulling out the button (1) a little bit and moving it to IR when the monocular is working in the conditions of extreme low light or total darkness. You can see the red light emits from IR illuminator (8), which means the IR illuminator is functioning. **NOTE:** The light from the illuminator can be detected by others that are using night vision devices. You can also move the button to AT, in this mode, the IR illuminator will turn on automatically when the ambient light is less than 0.05Lux, and the device will turn off automatically when the ambient light is more than 0.1Lux.
4. Focus the objective lens (3) by rotating the objective lens ring for sharper image of viewed object. Adjust eyepiece (5) by rotating the eyepiece ring for sharper image of intensifier screen. Repeat these two steps for 3 times, then you might gain the sharpest image.
5. The light detector (9) can detect the surrounding illuminance, the device will be shut off automatically when the ambient light exceeds 40 Lux in 10 seconds.
6. When you finish observing, pull out the operation button(1) a little bit and move it to OFF, then the device stops working.

J. Flip up head mount installation

A. Fitting the head mount

Adjust the head mount first before attaching the NV unit to it.

1. Loosen all the straps and place the head mount on your head.
2. Fit the head mount to your head size and tighten all the straps to fixate the head mount.

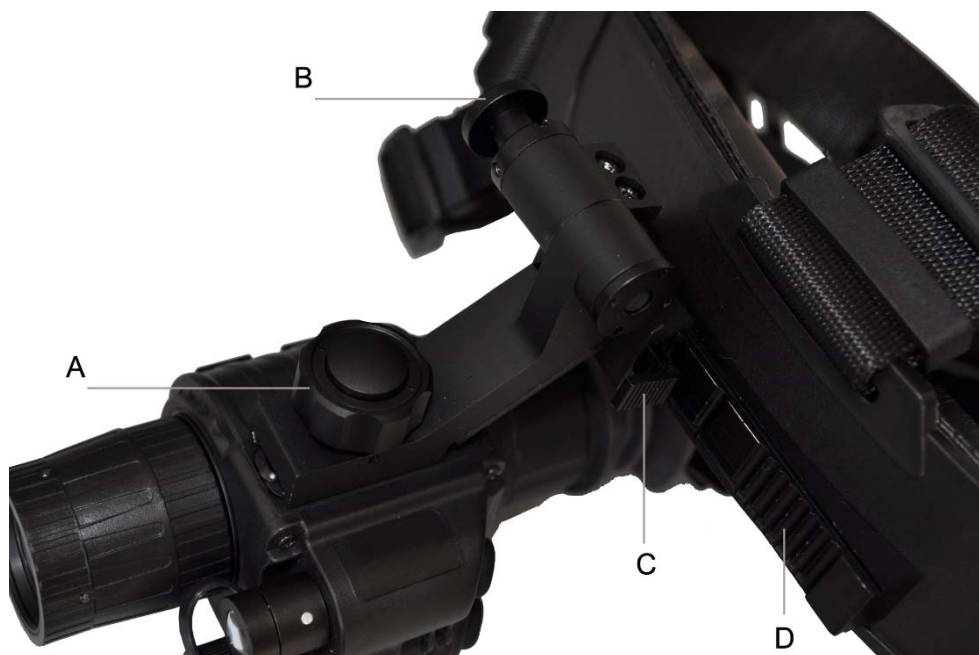




Figure01



Figure02


B. NV installation and adjustment

Now you are ready to mount the NV monoculars onto head mount.


To mount the monocular to a head mount, perform the following:

1. Loosen the screw (A). Insert the rail of the head mount into the mounting part (7) of the device. Then tighten the screw (A) after adjusting it to a right position. Now the device is fixated onto the head mount firmly. **Note:** There're 3 mounting parts on the body. All can be used for equipping with the head mount or helmet mount assembly.
2. Place the head mount with monocular onto your head. (as Figure01 shows). The device can be also mounted on helmet with helmet mount assembly. (as Figure02 shows)
3. The monocular head mount has a flip-up mechanism. Push in the button (B) and lift the unit up till the device reaches on the top position. The device will turn off automatically at this position.
4. Push in the same button (B) to lower monocular to the viewing position. The device will be turned on for continuation of the operation.
5. The monocular can be placed before the right or left eye. In order to re-adjust the monocular for use with another eye, push the button (C) and move the device along the slide rail (D) to comfortable position at the other side. **Note:** Adjustable range for slide rail (D) is 62mm.

K.Optional accessories

1	<p>Helmet mount assembly D-A006</p> <p>Note: This helmet mount assembly allows night vision monoculars, goggles or binoculars to mount on helmet.</p>	
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2	<p>Head mount with magnetic control D-A007</p> <p>Note: This head mount allows night vision devices to mount on the head for hands-free usage.</p>	
3	<p>Detachable IR illuminator D- IR1000</p> <p>Note: This detachable IR illuminator provides 2-3 times visible distance extension. You can quickly and easily attach this illuminator to your night vision device to increase performance and to operate your night vision device in total darkness.</p>	
4	<p>Picatinny weapon mount D-A004</p> <p>Note: This weapon mount allows to attach night vision monoculars to standard weaver or picatinny rails. The monocular itself is not a weapon sight, however, it can be used in conjunction with a collimated dot sight or laser aiming device when mounted on the weapon, then it can be converted into a weapon sight.</p>	
5	<p>3X objective lens D-O203X</p> <p>Note: This 3x lens can be attached to our Gen2+ or Gen3 night vision devices without any accessories for enhanced range performance.</p>	
6	<p>3X a-focal lens D-O203X-A</p> <p>Note: This 3X a-focal lens can be easily attached to 1X lens directly for enhanced range performance.</p>	

7	<p>Dual bridge D-A001</p> <p>Note: It allows to convert two night vision monoculars into one dual night vision binocular system.</p>	
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L. Precautions

1. Do not disassemble the unit.
2. It's better to use device under +5°C to +40°C. After the unit usage in temperatures below zero, wait at least 3 hours at room temperature, to avoid condensation accumulating on the internal lens surfaces and the consequent fogging caused by extreme temperature differences.
3. Keep the device in soft carrying bag, ventilated and dry place with temperature which does not exceed +15°C. Keep away from heating device and avoid direct sunlight and high humidity which does not exceed 70%.
4. NVD should be used in nighttime and can't be aim at strong light. If you have to test it during daytime, the front lens cap should never be removed. You can observe the target through the hole in the protection cap.
5. Use good quality lithium battery or alkaline cell, as bad quality batteries will effect the performance of the NVD and easily damage the device.
6. Try to avoid the rain and mist, and avoid dropping, shaking and collision.
7. Use clean soft cloth and dampened in alcohol,if necessary.
8. A useful tip is to remove the battery when the night vision will be not in use for over 3 days to prevent battery leakage and damaging the device.

NOTE: It is normal that the device can not be turned on when the ambient light exceeds 40 Lux. This device has protection system, which cuts off the image intensifier when ambient light level exceeds the limit of 40 Lux during a 10 seconds period.

Failure to follow the above precautions may cause the unit damage and will void the manufacturer's warranty.

M. Troubleshooting

If the device does not turn on

1. Reinstall the battery with the correct polarity.
2. Replace battery.
3. Clean the battery compartment, focusing on the contact points.

The observed image flickers or flashes

This means there is too much light(e.g. observation during twilight conditions).Turn off the unit or place the objective lens cover. The unit will function normally in light conditions not in excess of 0.1Lx(full moon).

The image is missing or not focused

1. Re-focus the unit by adjusting objective lens. Adjust diopter setting by rotating eyepiece, if necessary.
2. Check the cleanliness of the objective surface and eyepiece and clean if necessary.
3. Replace batteries.
4. In extreme low light conditions, activate the built-in IR illuminator.

Image disappeared or its quality worsened

1. Automatic shut off might occurred to protect the unit from excessive light. Attach the objective lens cover and ensure that unit started to function normally. Turn the unit off and wait until the conditions darken to continue observation.
2. Bright light sources(e.g. street lights)may cause visibility to decrease or disappear. Turn the monocular away from the light source, visibility will restore itself in several minutes.

You see black dots on the screen

These dots are minor cosmetic blemishes resulting from the image intensifier production processes and are not a sign of a defective or low quality unit. These dots do not interfere with the reliability and performance of the monocular.

N. Warranty

Our warranty is 2 year from the date of purchase. For detailed warranty info, please refer to Daking's Warranty Service.

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