



**Dedal-552  
Night Vision Clip-on Attachment**

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Operation Manual

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[www.dedalnoptics.com](http://www.dedalnoptics.com)

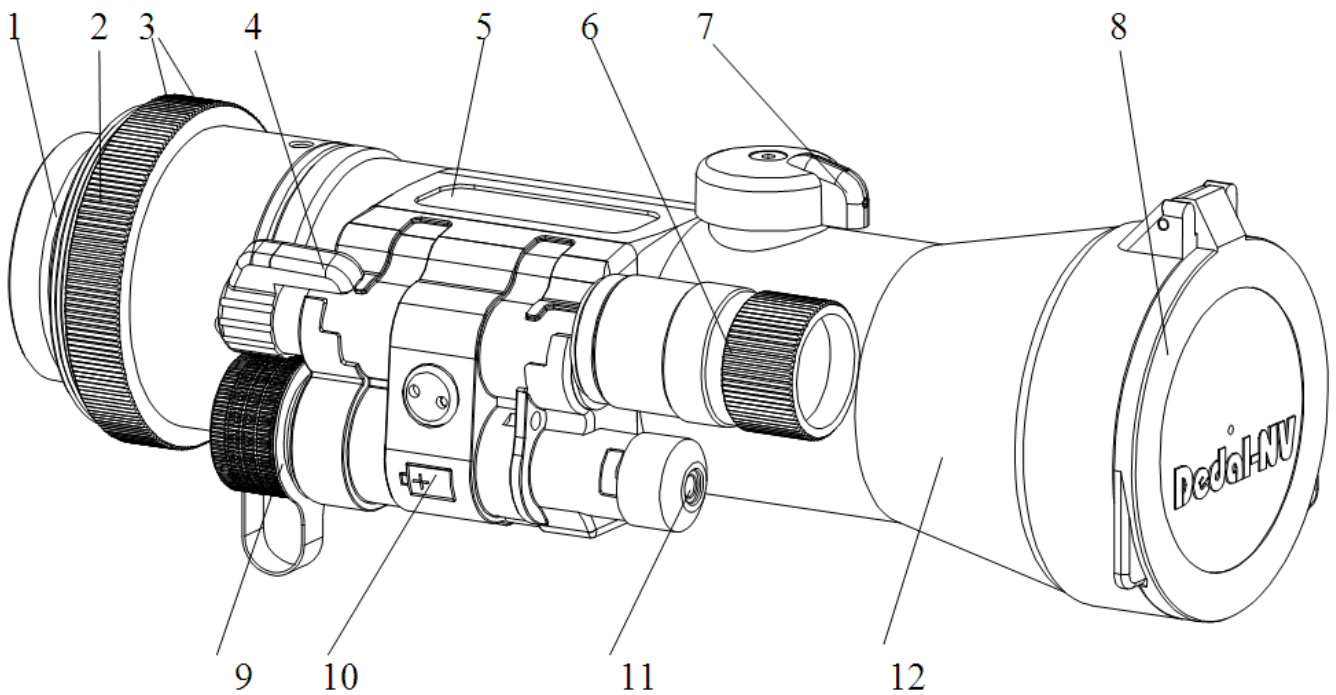
## **Features**

- *Installation of “Dedal-552” in front of a day scope on a weapon does not affect the latter’s zeroing*
- *All daytime riflescope’s tactical capabilities are preserved*
- *Special high-contrast fast optics*
- *Large exit pupil*
- *Internal focusing of the objective lens (from 10 meters to infinity)*
- *High image quality through the entire field of view*
- *Image Intensifier Tube of 2+, 3 (Russian made) or XR-5 (Photonis French-Dutch made) generations*
- *Built-in powerful eyesafe infrared illuminator*
- *Hermetically sealed*
- *Compact*
- *Lightweight*

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## ***Device Appearance***



- 1 - Eyepiece with Cap
- 2 - Fixation Ring
- 3 - Retention Screws
- 4 - ON/OFF and IR ON Switch
- 5 - Body of the Device
- 6 - Built-in IR Illuminator
- 7 - Objective Focus Adjustment Knob
- 8 - Objective Lens Cap
- 9 - Battery Compartment Cap
- 10 - Battery Compartment
- 11 - Remote Switch Connector
- 12 - Objective Lens

Figure 1

## **Brief Description**

"Dedal-552" is an afocal night vision device designed to be mounted in front of a daytime optical device (weapon scope or surveillance optical device) for purposes such as:

- ***night hunting;***
- ***night surveillance;***
- ***night patrolling and objects protection.***

"Dedal-552" incorporates Image Intensifier Tube that belongs to generation 2+, 3 or XR-5, which provides multiple times of light amplification in visible and close infrared zones of light spectrum.

### ***RECOMMENDATION:***

*"Dedal-552" belongs to Night Vision Riflescopes class of night vision devices. Use of night vision riflescopes may be restricted or prohibited by national or local regulations. Please consult with local authorities as to whether you are allowed using the Night Vision Attachment on your weapon legally in your area.*

## Technical Parameters

<b>“Dedal-552”</b>	
<b>General</b>	
Magnification, x	1.0
Field of view, degrees	8.8
Objective lens	78mm-HC-F/1.5, T/1.6
Focus range	From 10 m to infinity
Magnification of the daytime scope or monocular	acceptable - 1-24
	optimal - 3-16
Exit pupil diameter, mm	34
Power supply	1x CR123A lithium battery
Magnification of the daytime scope or monocular	acceptable - 1-24 optimal - 3-16
Time of continuous operation , hours	>60
Built-in infrared illuminator (805 nm), mW	75 (two power modes)
Dimensions, mm	215x66x80
Weight (without mount), kg	0.65
<b>Image Intensifier Tube (IIT)</b>	
IIT type (photocathode sensitivity ( $\mu\text{A}/\text{lm}$ ), resolution (lp/mm), screen colour)	
<b>Modification</b> : “Dedal-552-DEP_0”	Gen. 2+ (-, typical 64)
<b>Modification</b> : “Dedal-552-DEP_XR-5”	XR-5 (minimal 700, minimal 64)
<b>Modification</b> : “Dedal-552-DK2” “Dedal-552-DK3” “Dedal-552-DK3/bw”	Gen. 3 (minimal 1800, minimal 57)
	Gen. 3 (minimal 1800, minimal 64)
	Gen. 3 (minimal 1800, minimal 64, black&white)
<b>Environmental conditions</b>	
Operating temperature range	From -40 °C to +50 °C
Relative humidity, %	98

1. *Small black dots or groups of dots, which are allowed by technical conditions of the IIT manufacturers, may be present on the screen.*
2. *Technical parameters of the device can be improved without prior notice.*
3. *The logo marking of the device may appear as "Dedal-552" or "D-552".*

## ***Delivery Set***

### **Standard Delivery Set:**

- "Dedal-552" Night Vision Attachment (with objective and eyepiece caps) - 1 pc.
- Cleaning Cloth - 1 pc.
- Operation Manual - 1 pc.
- Warranty Card - 1 pc.
- Soft Bag - 1 pc.

### **Optional Accessories:**

(not included into the standard delivery set)

- AD540-D56 - Mounting Adapter for Daytime Riflescope with 56 mm objective diameter - 1 pc.
- AD540-D50 - Mounting Adapter for Daytime Riflescope with 50 mm objective diameter - 1 pc.
- AD540-D42 - Mounting Adapter for Daytime Riflescope with 42 mm objective diameter - 1 pc.
- AD540-D24 - Mounting Adapter for Daytime Riflescope with 24 mm objective diameter - 1 pc.
- AD540-XX - Mounting Adapter for Daytime Riflescope produced by "Rusan" Company (Croatia) - 1 pc.
- SMW542 - Mounting Adapter for the Side Weaver Rail - 1 pc.
- WP542(BHxx) - Mounting Adapter for the Top Weaver Rail with the height of the optical axis of "Dedal-552" above the rail equal to xx=34 mm / xx=38 mm / xx=52 mm - 1 pc.
- D-542 Rubber Eyepiece (Light Suppressor) - 1pc.
- RC-01 - Wired Remote Control Switch - 1 pc.
- RC-02 - Wireless Remote Control Switch - 1 pc.
- IR75-D - Infrared Autonomous LED Illuminator 75 mW - 1 pc.
- IR150 - Infrared Autonomous LED Illuminator 150 mW - 1 pc.
- IRL160 - Infrared Autonomous Laser Illuminator 90 mW - 1 pc.
- CR123A Battery - 1pc.
- M542-2x/M37 - Optical Monocular with 2x magnification to convert "Dedal-552" into 2x scope together with M52/37 Camera/Video Adapter - 1 pc.

## **Battery Installation**

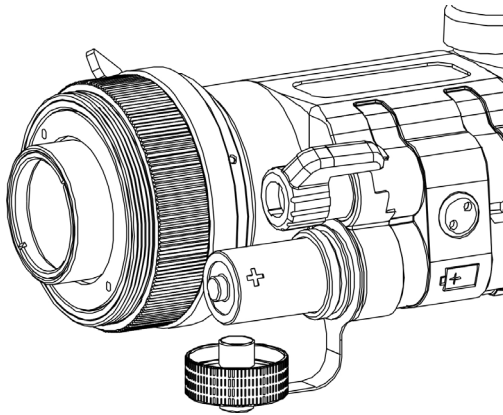


Figure 2

"Dedal-552" Night Vision Attachment is powered by one battery CR123A.

Make sure that the battery is in good condition and installed in accordance with the drawing on the battery compartment (Fig. 2).

To replace the battery unscrew the battery compartment cap and install new battery, observing correct polarity.

## **Testing in the Daytime**

You can test the device with the objective lens cap closed during daylight. The objective lens cap has a pinhole that is sufficient to test device workability. A yellowish-green image will appear on the screen after you turn it on with the switch 4 (Fig. 1).

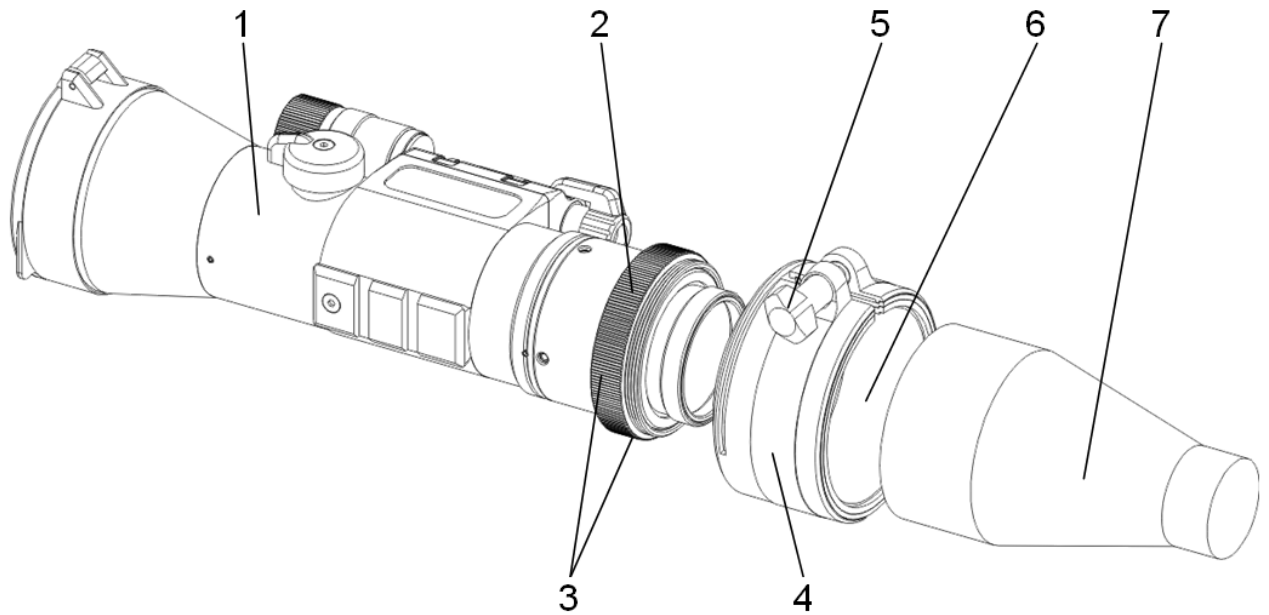
## **Installation in Front of a Daytime Riflescope with the Throw-on Mounting Adapter AD540**

The most advisable way of Night Vision Attachment mounting in front of a daytime riflescope is to use the throw-on adapter AD540 that is fixed on the riflescope objective part.

This type adapter is available in four variations:

<b>Adapter</b>	<b>Riflescope Objective Lens Diameter</b>	<b>Set of Inserts (qty x thickness)</b>
AD540-D56	56 mm	Plastic: 1 pc. x 1 mm, 1 pc. x 2 mm
AD540-D50	50 mm	
AD540-D42	42 mm	Resin: 1 pc. x 1 mm, 1 pc. x 2 mm
AD540-D24	24 mm	





- 1- Night Vision Attachment "Dedal-552"
- 2- Fixation Ring
- 3- Retention Screw
- 4- Adapter AD540-D56 (AD540-D50, AD540-D42, AD540-D24)
- 5- Adapter Screw
- 6- Plastic Inserts
- 7- Objective of the Daytime Scope

Figure 3

Assemble the adapter and mount the Night Vision Attachment as follows (refer to the Fig. 3):

- Choose the required adapter, for example, AD540-D50. The adapter diameter must correspond to your riflescope objective lens diameter. For example, you will need AD540-D50 for the riflescope Swarovski Z6i 2-12x50.

**NOTE:**

*The last two digits of the adapter name point to the objective lens diameter of the daytime riflescope.*

**NOTE:**

*The lens of the daytime scope must be positioned at least 15 mm behind the front edge of the scope body. This excludes mechanical contact of the Night Vision Attachment and daytime scope objective lens.*

**NOTE:**

*You can also use an adapter produced by the Rusan Company (Croatia) after selecting the correct adapter size according to recommendations placed on the manufacturer's website [www.rusan.hr](http://www.rusan.hr)*

- Depending on the external diameter of your daytime riflescope, use a 1 mm or 2 mm plastic insert so that the adapter with the insert fits loose, but without drift on the riflescope objective (7), when the adapter screw (5) is not tightened.

**NOTE:**

*You can also use additional resin inserts. Find a resin stripe of appropriate thickness and width, cut the needed length and glue inside the adapter.*

- Screw the adapter (4) on the Night Vision Attachment thread (1) 4-5 mm deep. Stop in a comfortable position (the screw (5) points upwards or sideways) and fix with the ring (2). Retention screws (3) in the ring (2) must be loosened beforehand, and tightened afterwards. Later, when the adapter (4) is taken off and screwed on again into the ring (2), it will appear in the same position.
- Then the Night Vision Attachment with the fixed adapter should be put on the riflescope objective (7) and fixed by the screw (5). The device is now ready for operation.

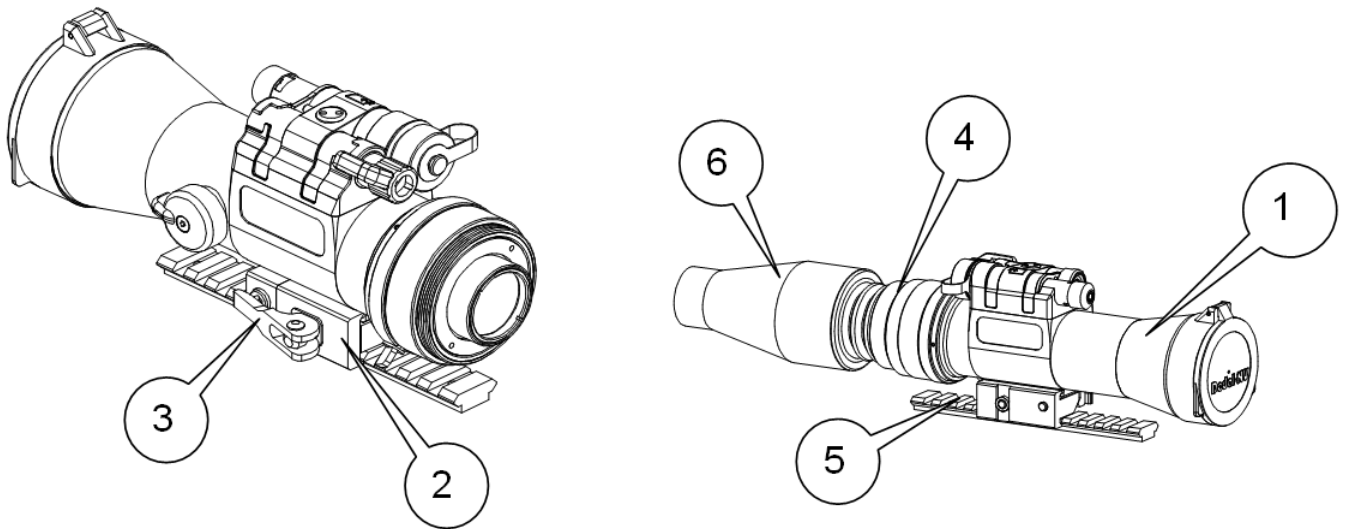
## ***Installation in Front of a Daytime Riflescope on a Weaver Rail***

Your weapon must have a top or side Weaver rail longer than 5 cm in front of the daytime riflescope. This rail must be fixed on top or on the side of the rifle.

With this method, physical connection between the Night Vision Attachment “Dedal-552” and daytime riflescope is excluded.

You must provide coincidence between the riflescope and Night Vision Attachment optical lines of sight. Allowed deviation should not exceed  $\pm 2$  mm in either side and  $\pm 20$  minutes of angle in either direction.

**Installation on the Top Weaver (Picatinny) Rail** is performed by the mount WP542(BH34), WP542(BH38) or WP542(BH52). These mount versions provide a 34 mm and 38 mm distance of the optical line of sight from the top point of the rail respectively.

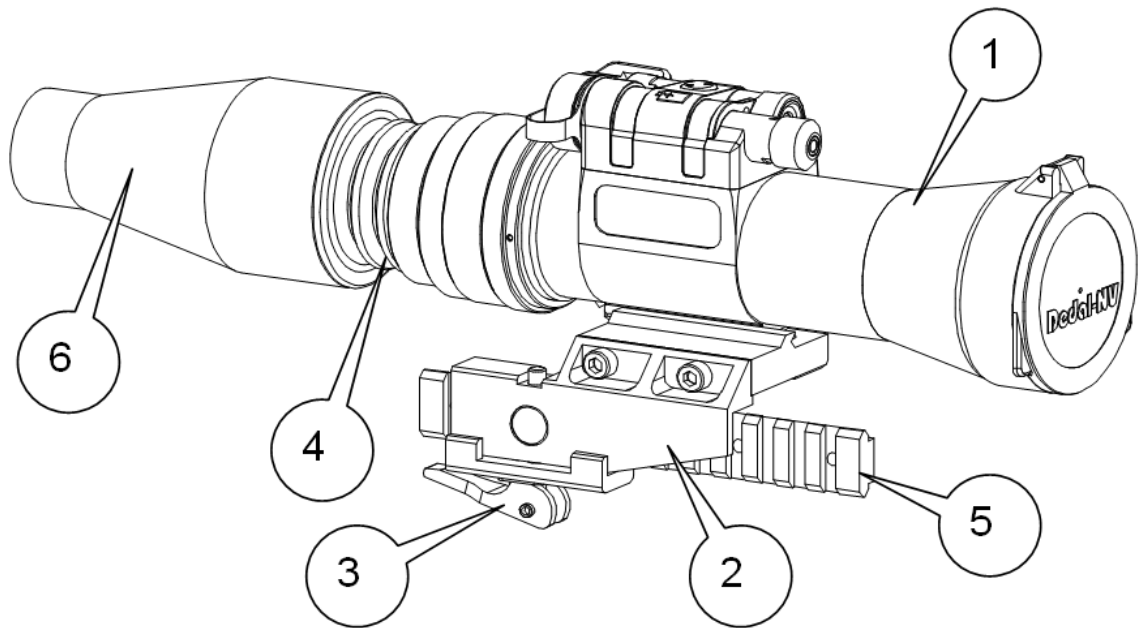


- 1 - Device Body
- 2 - WP542(BHxx) Mount
- 3 - Quick Release Throw-Lever
- 4 - Rubber Light Suppressor
- 5 - Weaver/Picatinny Rail on the Rifle Top
- 6 - Daytime Riflescope

Figure 4

The Night Vision Attachment is mounted on the top Weaver/Picatinny rail so that the Rubber Light Suppressor (4) is pressed tightly to the daytime riflescope edge. The Light Suppressor is used to prevent the user from being disclosed by the green light emitted by the Night Vision Attachment and to isolate the optical connection between the two devices from atmospheric precipitation. The device is firmly fixed on the rail by the Quick Release Throw-Lever (3).

**Installation on the side Weaver (Picatinny) Rail is performed by the mount SMW-542.**



- 1 - Device Body
- 2 - SMW-542 Mount
- 3 - Quick Release Throw-Lever
- 4 - Rubber Light Suppressor
- 5 - Weaver/Picatinny Rail on the Rifle Side
- 6 - Daytime Riflescope

Figure 5

The Night Vision Attachment is mounted on the side Weaver/Picatinny rail so that the Rubber Light Suppressor (4) is pressed tightly to the daytime riflescope edge. The Light Suppressor is used to prevent the user from being disclosed by the green light emitted by the Night Vision Attachment and to isolate the optical connection between the two devices from atmospheric precipitation. The device is firmly fixed on the rail by the quick release throw-lever (3).

## ***Operation at Night with Daytime Riflescope***

Before you start:

- Check the daytime riflescope adjustment (diopter setting, parallax, zeroing, etc.)
- Install the battery into "Dedal-552" and mount it in front of the daytime riflescope.

### ***NOTE:***

*Being mounted in front of a daytime riflescope, the Night Vision Attachment practically does not influence its zeroing and keeps all tactical features of the daytime riflescope (zoom level, adjustment step, etc.) intact.*

- Open the objective lens cap (8) and turn the switch (4) (Fig.1) of the device into the ON position. You should see a yellowish-green light through the eyepiece of the daytime riflescope (the device works in passive mode).
- Use focusing knob (7) to achieve sharp image with the 3x-5x optical magnification of the daytime riflescope.
- If you want to bring the observed object closer, increase magnification of the daytime riflescope by 7x-16x.

### ***NOTE:***

*Under high magnification the image may seem blurry or to not have enough contrast. Do not try to achieve a better focus with the focusing knob (7), because it will not provide sharpness in this case.*

- Achieve maximum sharpness by using the parallax adjustment knob of the daytime riflescope (if such knob is present on your scope). Most often, it is better to find the optimal position of the parallax adjustment knob by achieving the best view of the IIT screen structure (small dots, noise, hive lines).
- Set magnification of the daytime riflescope to the position that suits the most comfortable observation configuration for you.

### ***NOTE:***

*Lower magnification of the daytime scope provides wider field of view and more visual contrast.*

*Higher magnification of the daytime riflescope, even when the image is not sharp, can provide better shooting results due to larger size of the target.*

### ***NOTE:***

*Detection and recognition ranges provided by the device depend on ambient light illumination, quality of daytime riflescope, transparency of*

*the atmosphere and contrast ratio between target and background. When natural illumination is high, i.e. under a full moon or with external illumination, and if the target is located against a bright background (sand, snow), detection range increases. When natural illumination is low, the air is not transparent, and if the target is located against dark background (plough-land, trees, grass, etc.), detection range decreases.*

- If you need to highlight the object additionally, rotate the switch (4) in the battery compartment direction and turn on the built-in illuminator (6) in the minimal power mode. The next rotation step of the switch (4) towards the battery compartment will turn on the illuminator in the maximal power mode (75 mW). Divergence of IR beam can be changed from 5 to 20 degrees by rotating the IR lens (6).
- Zeroing of combination of daytime riflescope and Night Vision Attachment should be performed in accordance with the instructions of the daytime riflescope zeroing.

**NOTE:**

*While shooting with the Night Vision Attachment installed through the AD540 adapter, it can shift forward along the daytime riflescope. This shift depends on strength, with which the screw (5) is tightened, weapon recoil and may be up to 1 mm per each shot.*

*Such a shift is allowed and does not influence the mean impact point. Please control the adapter position during shooting to avoid its complete slipping down the riflescope.*

**NOTE:**

*Being mounted in front of the daytime riflescope, the Night Vision Attachment can change zeroing within 3 cm at a 100 m range. This is connected with changes in the weapon balance, light distortions in the image intensifier tube, technological limits of the Night Vision Attachment assembly. This imprecision usually appears as fixed value and can be easily compensated by the adjustment mechanism of the daytime riflescope.*

**RECOMMENDATION:**

*Due to peculiarities of production technology and IIT design, the quality assurance of the IIT supplier cannot exclude hidden defects that may appear as a consequence of recoil during shooting. Therefore, it is recommended to make 10-15 shots with the mounted Night Vision Attachment before use in field conditions. This will work as the additional test of the night sight reliability before its real use.*

- Set the switch (4) into the OFF position after work is over.
- Close the objective lens cover.

**DO NOT FORGET TO TURN OFF THE DEVICE AFTER USE!**

## ***Use as a Device for Night Observation***

"Dedal-552" can be used as a fully functional device for observation in the night.

Transformation into Night Vision Scope is performed with optional M542-2x/M37 optical monocular that is mounted behind the Night Vision Attachment.

Operation sequence:

- Screw the M52/37 adapter ring in the thread of the Night Vision Attachment ocular.
- Screw the optical monocular M542-2x in the thread of the M52/37 ring.

The resulting device will be night sight with 2x optical magnification.

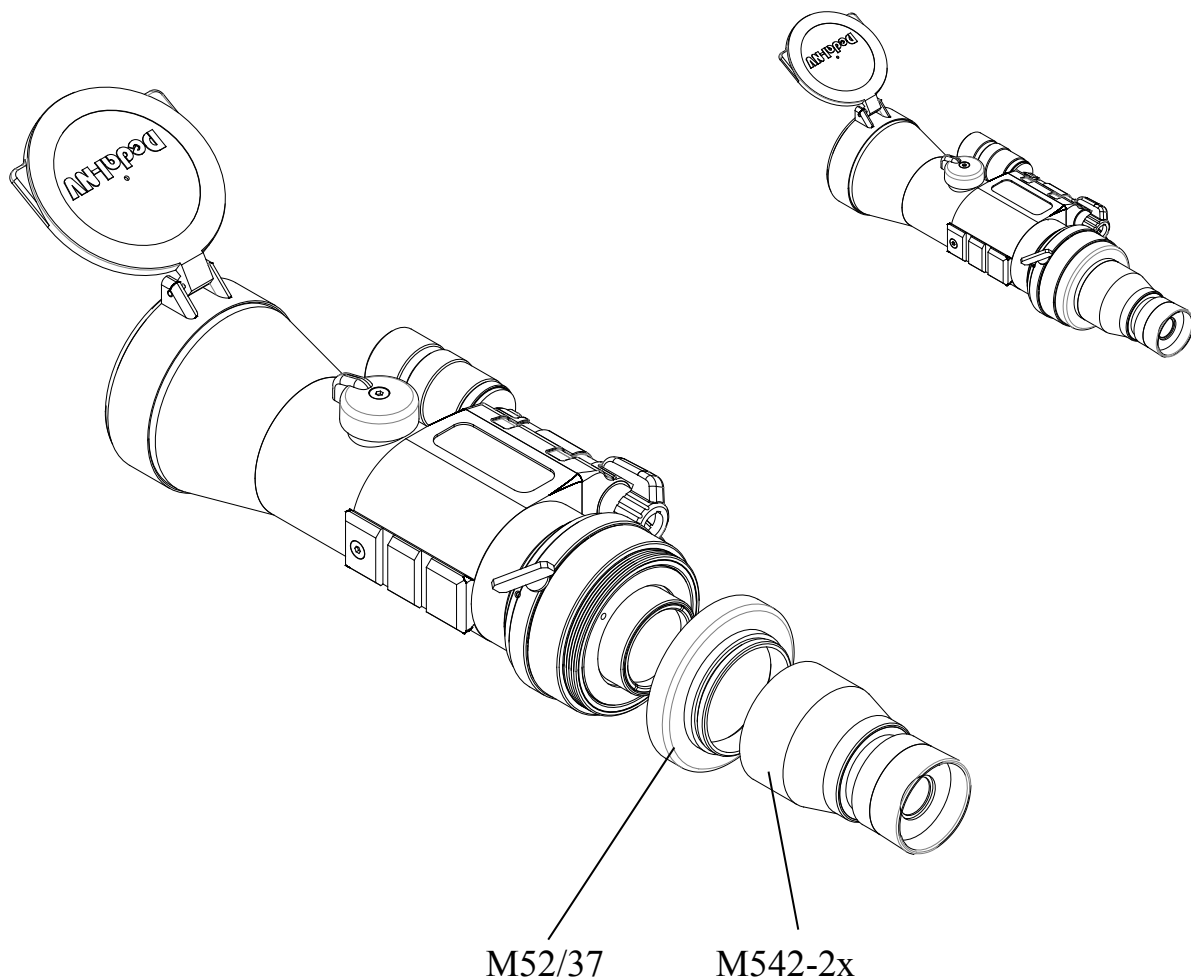


Figure 6

- Open the objective lens cap
- Turn the switch (4) (Fig.1) of the device into the ON position. You should see a yellowish-green light (the device works in passive mode).
- Choose an object of observation.
- If necessary, turn on the IR-illuminator (6) as described above (the device works in active mode).
- Turn off the switch (4) after work is over.
- Close the objective lens cap.

***DO NOT FORGET TO TURN OFF THE DEVICE AFTER USE!***



## **Connection with Cameras / Camcorders, Daytime Binoculars or Spotting Scopes**

"Dedal-552" can be used for taking pictures and videos in the night. Operation sequence:

- Screw the M52/37 adapter ring into the thread of the Night Vision Attachment ocular.
- Screw the M52/37 adapter ring into the camera or camcorder objective thread that is used for the light filter.

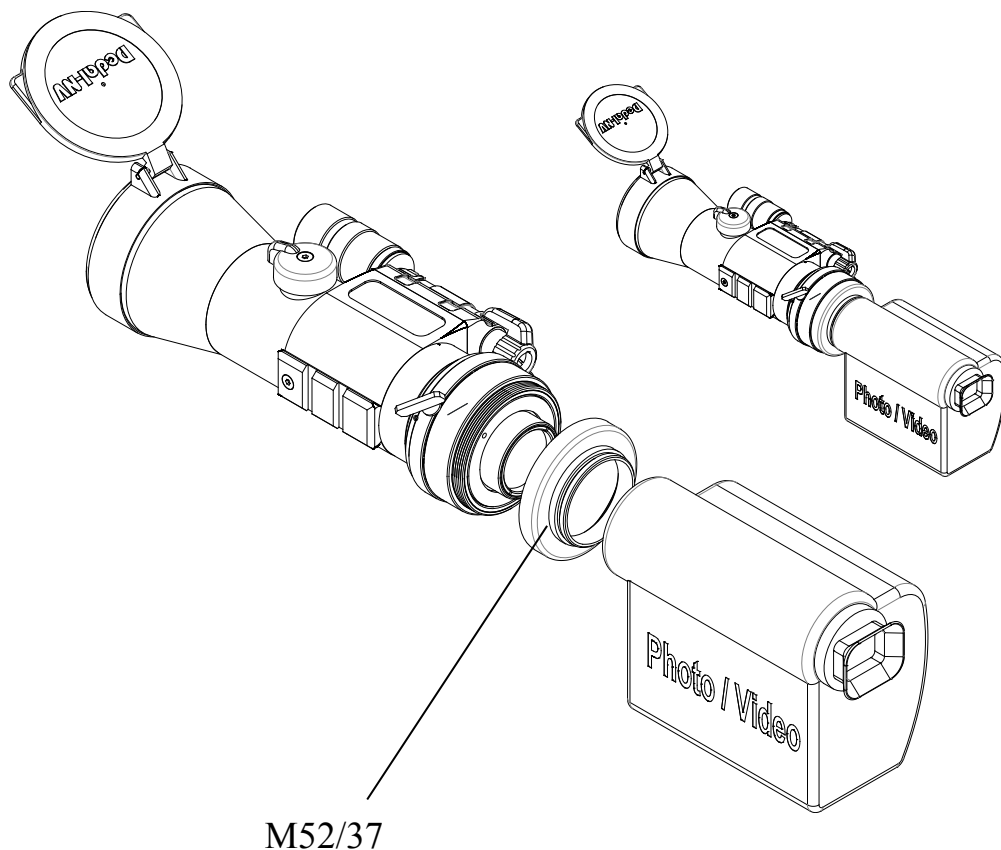


Figure 7

**NOTE:**

*If the objective lens of your camera has another thread size (for example, 49 mm or 58 mm), you should purchase an appropriate step-up / step-down photographic ring in a camera store or order this ring at "Dedal-NV" company.*

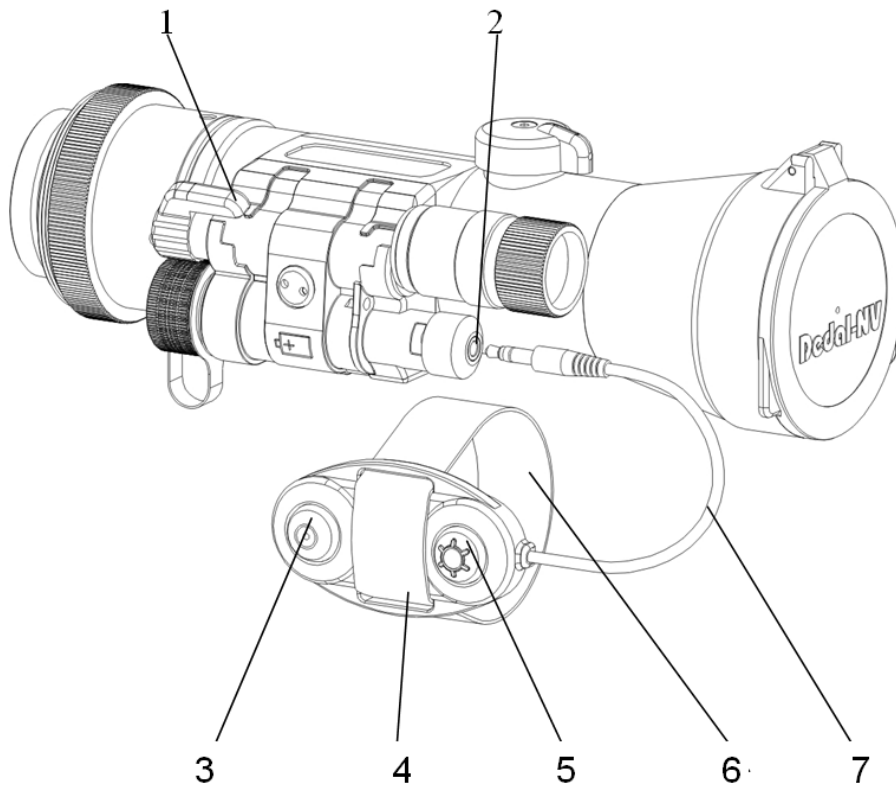
To attach "Dedal-552" with a daytime binocular or a spotting scope, screw the ocular of the Night Vision Attachment in the internal thread of your optical device directly or through an appropriate thread adapter.

- Open the objective lens cap.
- Turn the switch (4) (Fig.1) of the device into the ON position. You should see a yellowish-green light (the device works in passive mode).
- Choose an object of observation and recording.
- If necessary, turn on the IR-illuminator (6) as described above (the device will work in active mode).
- Turn off the switch (4) after work is over.
- Close the objective lens cap.

***DO NOT FORGET TO TURN OFF THE DEVICE AFTER USE!***

## Operation with Remote Control

The "Dedal-552" Night Vision Attachment has the capability of operation with the external remote control (RC-01) that turns the device itself and its IR illuminator on and off.



- 1 – On/Off and IR-On Switch
- 2 – Female Connector for the Remote Control
- 3 – Start Button of the Remote Control
- 4 – RC-01 Remote Control Body
- 5 – Start Button of the IR Illuminator
- 6 – Fixating Band with Velcro
- 7 – Remote Control Cable

Figure 8

Operation procedure:

- Insert the jack of the remote control into the Female Connector (2) (Fig.6).
- Fix the Remote Control (4) on the weapon with the Fixating Band (6) in a comfortable position.
- Press and release the button (3) to turn the device on.
- Press and release the button (5) to turn the IR Illuminator on.

- IR Illuminator power is determined by position of the switch (1) and is maximal when this switch is in the closest position to the battery compartment.
- Next press and release of the buttons (3) and (5) toggle the controlled functions.

"Dedal-552" allows for use of the wireless remote control RC-02 that performs the same functions. It is supplied with its own operation manual.

### ***Storage and Transportation Rules***

- Store and carry the Night Vision Attachment in the closed bag with the protective objective lens cap on.
- Avoid impacts, moisture and sharp changes of temperature. The optics should be protected against dust, snow, rain and direct sun rays.
- Store the device in dry conditioned premises without battery away from sources of heat, such as heating appliances or central heating.
- Do not store the Night Vision Attachment at temperatures lower than 10°C (50°F) or higher than 60°C (140°F).
- Remove the battery from the Night Vision Attachment during extended periods of non-operation to avoid battery leakage.
- The Night Vision Attachment does not require special technical service.
- Clean optical surfaces with the optical cloths that are included in the delivery set only.

## ***Troubleshooting***

### **"Dedal-552" does not turn on**

Check whether the battery is installed properly. Check the charge of the battery. Replace it if it is weak.

### **The target does not appear in focus**

If the image cannot be focused by the knob (7) (Fig. 1) and parallax adjustment of the daytime scope, clean the lenses. They could be foggy or dusty.

### **Low-contrast or dark image**

Bright light source can be a reason for losing image quality or complete IIT shutdown. This mechanism is known as automatic brightness protection. When the device is placed under normal low-light illumination condition, the image will be restored.

### **Condensation accumulates on the parts**

In order to avoid misting of the eyepiece lens in cold conditions use a special protective cover (like the one for eyeglasses).

### **Black dots on the screen**

Some blemishes in the IIT, which do not affect the performance or reliability of a night vision device, are allowed by IIT manufacturers. Most of them can be observed in daytime only and become practically invisible during night.





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