

NIGHT SIGHT PN17K

Service manual

1 GENERAL INSTRUCTIONS

The night vision sight (hereafter "sight") is intended for aiming such weapons as "Verp", "Tiger", "Tiger-1", "Tiger-9", "Tiger1-9", "Saiga", "Saiga-5.6", "Los-7", "Bars-4", "Bars-4-1", "Record", as well as weapons having a Piccatiny rail and hunting weapons having mounts for standard prism "SP", for example "Browning".

The sight can be used at a temperature ranging from 40° to -40°C.

ATTENTION: It is prohibited to switch on the sight in daytime without a special light filter cap on, as well as watching bright objects (fire, headlights) though the sight in the night.

2 SPECIFICATIONS

Range of visibility, m	300
Effective lens diameter, mm	65
Magnification, x	3.7
Angular field of view, degrees	10
Focal ratio	1:1.5
Exit pupil, mm	8.5
Eye relief, mm	70
Diopter adjustment, diopter	-4 to +5
Step of reticule adjustment, mm/100 m	35
Voltage, V	2.4-3.6
Operation time without recharging a battery:	
with illuminator on, hours	3.5
with illuminator off, hours	16
Weight (without mount), kg	1.1
Overall dimensions (without mount), mm:	
length	302
width	67
height	100

3 COMPLETE SET

Night Sight PN-17K	1
Napkin	1
Carrying case	1
Mount (depending on a type of weapon)	1
Service manual	1

4 SAFETY

The sight is safe from the point of view of construction, operation, spare parts and materials used.

To protect the environment from pollution it is recommended to utilize discharged batteries in places intended for this purpose.

5 CONSTRUCTION AND OPERATION

The night sight is an opto-electronic device based on a principle of converting an image of low-illuminated object into a visible image.

The sight consists of an objective lens, image intensifying tube, eyepiece, two batteries, built-in infrared illuminator and a mount for fixing the sight on a weapon.

The objective 1 (fig. 1) is covered with a cap 12 provided with a thread. The cap protects objective from damages and allows using the sight in daytime and in twilight.

The brightness of the reticle is adjusted with the help of a ring situated on the eyepiece 8.

The rubber eyeshield 9 on the eyepiece protects the eye of the user from damages and makes the sight comfortable in use.

There are switch on/switch off buttons on the cover 10. These buttons allow switching the device and the infrared illuminator on and off.

3-4 seconds after pushing the button "ON" the field of view turns green with the black reticle on it. The handwheel 4 switches on the red reticle illuminator and makes its light brighter.

Infrared illuminator 4 is switched on with the help of the button "*". When the IR illuminator is on, a red light spot appears in the field of view.

The screws 5 and 7 are designed for regulating "left-right" (L↔R) and "up-down" (U↔D) directions of the sight. The connecting pipe 6 serves for expulsion of the sight with nitrogen.

The proper way of installing the batteries according to the polarity is shown on the body of the sight.

The mount 1 (fig. 2) serves for placing the sight on the rifles "Saiga-5.6" and "Vepr".

The mount 2 (fig. 2) serves for placing the sight on the rifles "Tiger" and "Tiger-9".

The mount 3 (fig. 2) serves for placing the sight on the rifles "Tiger-1", "Tiger-9-1", "Saiga", "Saiga5.6".

The mount 1 (fig. 3) serves for placing the sight on the rifles "Los-7", "Bars-4" and "Bars-4-1".

The mount 2 (fig. 3) serves for placing the sight on the weapon "Record".

The mount 3 (fig. 3) serves for placing the sight on the weapons provided with a Piccatiny rail.

The mounts 1, 2, 3 (fig. 3) are provided with a wrench 4.

The mount shown on the figure 4 is used for placing the sight on the weapons having supports for fastening a standard prism "SP", for example, the "Browning" rifle.

6 PREPARATION AND USAGE OF THE SIGHT

To prepare the sight and check its efficiency it is necessary to place the sight on a weapon and fix it.

The sight must not slide and float on a weapon, when it is used for shooting.

- Cover the objective 1 with a light filter cap 12 (fig. 1).
- Turn away the covers 2 (fig. 1) and lay in the batteries according to their polarity.
- Turn up the covers 2 tight
- Switch on the sight
- Turn the handwheel 4 to adjust the brightness of the crosshair in the field of view.

The aiming is done with the help of top angle of the crosshair.

One must do zeroing of a weapon before using it.

The zeroing is done only in daytime and only with a light filter cap on.

- A target (1x1 m in size) is placed at a distance of 100m.
- Make 3-4 shots aiming the top of the crosshair at the aiming mark (the center of target's black circle).
- Define the center of impact with the help of holes in the target.

In case the center of impact doesn't coincide with the aiming mark with a difference more than 3.5 cm, the adjustment of the sight must be made by means of turning the screws of vertical and horizontal adjustment with the help of a wrench. Turning the screw by one "click" moves the center of impact 3.5 cm aside when the target is placed at a distance of 100 m.

NOTE: If you choose another distance to place the target at, the "click" moves the center of impact 1.75 cm aside (target situated 50 m away) or 7 cm aside (target situated 200 m away).

The figure 5 shows that the center of impact of three holes is dislocated 24 cm upper and 17.5 cm to the left from the aiming point. To correct the location of the center of impact, turn the screw of vertical

adjustment

$24/3.5=7$ "clicks" down and the screw of horizontal adjustment $17.5/3.5=5$ "clicks" to the right.

After making this adjustment a number of control shots should be taken. The grouping of shots must be not worse than without the sight.

After zeroing no additional adjustments of the sight should be made.

If shooting at a distance exceeding 100 m, the zeroing of the weapon should be preserved, but another aiming point corresponding to the distance to the target should be chosen.

7 TECHNICAL MAINTENANCE

Keep the sight clean of dirt and dust. The outer parts of optical details must be always clean and tidy.

To provide proper work of the sight it is forbidden:

- to disassemble the sight;
- to switch on the sight in daytime and in twilight with a light filter cap off;
- to use other types of batteries;
- to store the sight with batteries installed.

Before conducting the maintenance the following operations must be done:

- it is necessary to clean the sight of dirt, dust and moisture;
- the condition of the batteries' contacts must be checked;
- it is also required to remove the oily stains from the surface of optical parts with the help of a clean napkin. If necessary, wet the napkin in alcohol.

8 STORAGE

The sight must be protected from mechanical damages. It must be kept in a heated room at a temperature from 5° to 35°C and relative humidity not exceeding 85%.

It is recommended to keep the sight in a bag with the batteries taken out.

9 TROUBLESHOOTING

In case of detection the faultinesses in the sight's operation, it is necessary to check:

- the fastening of the sight on a weapon;
- if there is a light filter cap on the objective;
- the absence of dust, dirt, oil, hoar-frost and water on the objective and eyepiece;
- if the batteries are on;
- if the batteries are correctly installed.

Note that the contacts of the batteries must be clean.

Table 3. The List of Possible Faultinesses

Faultiness	Possible reasons	Repair
The fluorescence of the image intensifier's screen is weak or absent	1 The batteries are discharged	1 Replace the batteries
	2 The batteries are installed incorrectly	2 Take the batteries out and install them correctly

Faultiness	Possible reasons	Repair
	3 The image intensifier has stopped working	3 Send the sight to repair facility
The brightness of the screen fluctuates, changes from strong to weak and	Light overload	Cover objective of the sight with a light filter cap

vise versa		
The image is weak and not sharp	Sweat and dirt on the outer surfaces of objective and eyepiece	Clean the outer surfaces of objective and eyepiece with a napkin
The image is weak and not sharp. There are flashes and blinking in the field of view	Sweat on the inner parts of objective, eyepiece and image intensifying tube	Submit the sight to specialist for drying and elimination of depressurization
Dark spots in the field of view hindering the process of aiming	Image intensifier is spoiled with a light strike	Send the sight to repair facility
Weak illumination of crosshair	1 The reticle-illuminating device is out of work 2 The batteries are discharged	1 Send the sight to repair facility 2 Replace the batteries

10 ACCEPTANCE CERTIFICATE

The night vision sight PN17K having a manufacturer number _____ satisfies all technical requirements _____ according to AL3.812.258 TU and can be put into operation.

Date of production _____

Signatures of persons responsible for acceptance of the articles

The address of manufacturer:

D.Kovalchuk 179/2 Novosibirsk 630049 Russia

NPZ Optics State Corporation ("Novosibirsk Instrument Making Plant")

Fax +7 3832 261594

www.npzoptics.com

prinsib@sol.ru