

Federation State Unitary Enterprise
Production Amalgamation
"Novosibirsk Instrument-Making Plant"



UNIVERSAL DAY/NIGHT OPTICAL SIGHT PN6K-5

Service manual

TABLE OF CONTENTS

| | |
|---|----|
| 1 Description and operation | 4 |
| 1.1 Purpose | 4 |
| 1.2 Technical specifications | 5 |
| 1.3 Package inventory | 6 |
| 1.4 Design and operation principle | 7 |
| 1.5 Tools and accessories | 8 |
| 2 Operation | 9 |
| 2.1 Preparation of the sight for operation | 9 |
| 2.1.1 Security measures during the preparation for observations | 9 |
| 2.1.2 General instructions | 10 |
| 2.1.3 Mounting on a weapon | 12 |
| 3 Maintenance | 12 |
| 3.1 General instructions | 12 |
| 4 Possible malfunctions and their remedies | 13 |
| 5 Storage | 15 |
| 6 Acceptance certificate | 16 |
| Appendix A Illustration list | 17 |

1 DESCRIPTION AND OPERATION

1.1 Purpose

1.1.1 Universal day/night optical sight PN6K-5 is a day/night sight (hereinafter referred to as the sight) with the set of accessories. The sight is intended for aimed firing on daylight and at night, using the hunting weapon of type "Tigr", "Saiga", "Vepr" with side mounting rail and for hunting weapon with upper slot – Picatinny rail.

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

1.1.3 The operation temperature range of the sight is from -40 to +40°C and relative humidity up to 100% at temperature +25°C.

1.2 Technical specifications

| The specification | Value |
|--|---------|
| Visibility range at night under star light, m, not less | 500 |
| Magnification, x | 3.6 |
| System's angle field of a, deg | 9 |
| Eye relief, mm | 50 |
| Battery voltage, V | 2.0-3.2 |
| Consumption current, mA, not more | 50 |
| Battery lifetime without recharging, h: at temperature from 0 to 40°C | 10 |
| from 0 to -40°C | 3 |
| Weight of the sight, kg, not more | 1.7 |
| Overall dimensions of the sight, mm: length (with eye-shade) | 311 |
| width | 98 |
| height | 112 |
| Overall dimensions of a case, mm: length | 380 |
| width | 200 |
| height | 130 |

1.2.1 As a power supply, two accumulators are used. It is possible to use two batteries type AA. For charged level control, control device UK-316 11 is used.

1.3 Package inventory

| Item | Qty |
|-----------------------|-----|
| PN6K-5 sight | 1 |
| Plate holder | 1 |
| Battery type AA | 2 |
| Key | 1 |
| Control device UK-316 | 1 |
| Napkin | 1 |
| Bag | 1 |
| Cover | 1 |
| Case | 1 |
| Service manual | 1 |

1.4 Design and operation principle

1.4.1 Optical scheme of the Sight is made of two branches – day and night. They turn with a handle 3 (picture 1). Poor night image of a target intensifies with an Image Intensifier Tube (IIT). The light filter 1 in the flexible frame is placed on the objective 2, when the Sight is turned in the NIGHT mode in the conditions of intensive illumination of daytime or twilight. The light filter shifts upward or downward under the work in the DAY mode.

The aiming signs illumination regulates with the brightness of LED.

For twilight work the light filter 1 is set on objective 2 for image intensifier protection from light overloads.


1.4.2 The sight consists of following components: objective, body, eyepiece, mount.

Two accumulators (battery type A-316) are inserted into the plate-holder, the is set on switching mechanism and closed by cover 5.

The sight mounting is made with help of clutching mechanism, consisting of the mount 9 (picture 1), clutching screw and fastening mechanism.

1.4.3 The sight has following units of operating and control:

- the switch OFF for switching the reticle and image intensifier power supply on/off;

- the handle DAY/NIGHT 3 (picture 1) for setting the day or night operating mode;
- handwheel for smooth brightness adjustment of reticule, marked with the sign "  ";
- the screw 4, marked by symbol U↔D for line of aim height adjustment relatively to a weapon canal centerline;
- the screw 5, marked by symbol R↔L for line of aim course adjustment relatively to a weapon canal centerline.

1.5 Tools and accessories

1.5.2 Control device UK-316 11 is aimed for charged state control of accumulation level of battery cells type AA and analogues.

Numbers "1.1", "1.2", "1.3"; "1.4", marked near to the LED, signify the accumulator voltage in Volts.

1.5.4 The key is designed for turning the screws U↔D and R↔L.

1.5.5 The napkin is intended for clearance the external surfaces of optical components, accumulators' contacts, charger, control device UK-316.

1.5.6 The cover is used when the sight is transported mounted on a weapon.

1.5.10 The instrumentation and accessories are stored inside the cover.

2 OPERATION

2.1 Preparation of the sight for operation

2.1.1 Security measures during the preparation for observations

2.1.1.1 ATTENTION:

- DO NOT TOUCH THE OPTICAL COMPONENTS WITH HANDS. THE EXTERNAL SURFACES DUST, DIRT SHOULD BE DELETED WITH THE NAPKIN;
- DO NOT AFFORD SHORT CIRCUIT BETWEEN POWER SUPPLIES AND METALLIC STUFF;
- DO NOT SWITCH THE HANDLE DAY/NIGHT INTO THE POSITION NIGHT AT DAY TIME WITHOUT THE LIGHT FILTER ON THE OBJECTIVE;
- IN THE TWILIGHT WORK ONLY WITH LIGHT FILTER;
- AT NIGHT HOLD THE OBSERVATION AND TARGET SEARCH UNDER THE MINIMUM BRIGHTNESS OF AIMING MARKS OF THE RETICULE;
- DO NOT AIM THE SIGHT TO THE BRIGHT SOURCES OF LIGHT (FLARES, GLOWING AUTOMOTIVE HEAD LAMP) WHEN IT IS ON;
- IF HIGH-LIGHTED OBJECTS APPEAR IN THE FIELD OF NIGHT CHANNEL VIEW, MOVE THE HANDLE DAY/NIGHT INTO THE POSITION DAY OR SWITCH "OFF" INTO POSITION OFF.

2.1.1.2 **IT IS PROHIBITED TO:**

- WORK WITH THE SIGHT NOT MOUNTED SECURELY ON THE WEAPON;
- PRESS INTENSIVELY ON THE EYE SHADE BY THE EYE.

2.1.2 **General instructions**

2.1.2.1 Study the device, arrangement and fixing of the sight in the case and on the weapon.

2.1.2.2 Clean mounting surfaces of the sight from lubricant by the rags, and external surfaces of optical components by napkin.

2.1.2.3 Change the eye shades in the following order:

- unclasp the clutch (picture 1);
- take off the eye shade 16 together with the clutch 15;
- take the clutch 7 off the eye shade 8;
- take the eye shade from the single maintenance kit and fit it to the eyepiece frame, stretching it a bit;
- put the clutch on the eye shade and fasten it.

2.1.2.4 Under the temperatures below zero, keep the accumulators plate-holders inside of clothes pocket.

2.1.2.5 Check the voltage on the power supply contacts in the following order:

- place the power supply into the control device UK-316, keeping the polarity right up;

- if any LED is on, the power supply is charged, if it is not – power supply is discharged and it is not possible to use it;

2.1.2.6 Set the power supply on the sight in the following order:

- place the switch OFF into the position OFF;
- place the handle DAY/NIGHT into the position DAY;
- open the cover 1 (picture 2);
- remove the cassette;
- place two batteries type AA in the cassette according to indicated polarity;
- turn the cassette, so that a groove is directed to the device and insert it in the compartment. The cassette must easily enter in the compartment;
- close the cover.

Put the light filter on the objective. Settle the handle DAY/NIGHT into the position NIGHT, turn on the switch OFF and put the handwheel 6 into the middle position. The aiming marks on the yellow-green background should be seen;

- turn off the switch OFF.

2.1.2.7 For work in twilight conditions put the light filter on the objective, turn on the switch OFF, placing the handle DAY/NIGHT into the position NIGHT.

2.1.2.8 For night work turn on the switch OFF, placing the handle DAY/NIGHT into the position NIGHT, take off the light filter.

2.1.2.9 The work is finished, turn off the switch OFF, placing the handle DAY/NIGHT into the position DAY, set the light filter on the objective.

2.1.3 Mounting on a weapon

2.1.3.1 Mount the sight on the weapon in the following order:

- adjust the mounting seat groove 9 (picture 1) with the mount of type "dovetail";
- move the sight forward up to the stop and fix it, turning the handle 12 forward up to the total fixation on the mount 10. The sight should be mounted tightly on 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 11 and assure the handle 12 to be placed on the number of jags that provide tight fixation of the sight, place the latch 11 back on its place.

3 MAINTENANCE

3.1 General instructions

3.1.1 Keep the sight clean from the dust and dirty while operating. External optical component's surfaces should be always clean.

Clean the glass surface with flannel or cotton wool to remove grease. Make the cleaning with the solvent (spirit, ether or their blend) if the contamination is severe:

- wind a bit of a cotton wool at the end of wooden spatula;

- wet a cotton with the solvent, remove surplus of the solvent with spatula jog;
- wipe the glass by wetted cotton, not touching the frame;
- change the wool to the dry one and finish cleaning with circular motions from center to edge.

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

To remove corrosion from contact plates of accumulators, plate holder and from Control device UK-316 use analogue procedure.


4 POSSIBLE MALFUNCTIONS AND THEIR REMEDIES

When the malfunctions are found, check the following:

- the mounting of the sight on the weapon;
- the light filter is on the weapon;
- dust, dirt, grease, hoar-frost and water absence on the eyepiece and objective;
- if the switch OFF is on;
- draw special attention to the power supply contacts' cleanness.

The most probable consequences of faults and damages, instructions for their removal are given in the table.

Table

| Faults and damages | Probable reasons | Instructions on removal of fault and damage consequences |
|--|--|---|
| There is no fluorescence of image intensifier screen | 1 Power supply is discharged 2 Image intensifier is out of service | 1 Change the power supply by iodine one 2 Place the sight under repair |
| Image area is washed and faint | Sweating or dirtying of the eyepiece or objective external surfaces | Wipe the eyepiece and objective external surfaces with napkin |
| Black spots of faults and damages, impeding the confident sight's work, appeared in the field of view | 1 Image intensifier is damaged by point light sources 2 The peeling on the photocathode or on the image intensifier's screen appeared | Place the sight under the repair |
| There is no aiming marks fluorescence, when hand-wheel "  " is set on the maximal brightness and the switch OFF is on | 1 The power supply is discharged 2 Emissive device is out of service | 1 Replace the power supply 2 Place the article under the repair |

5 STORAGE

5.1. Keep the Sight in the heated storehouse, where the air temperature range is from plus 5 to plus 35°C and relative humidity do not exceed 85%.

5.2. Keep the articles in cases with removed accumulators.

6 ACCEPTANCE CERTIFICATE

The night sight PN6K-5, serial number _____ conforms to technical specifications and found serviceable.

Manufacturing date _____

Signatures _____

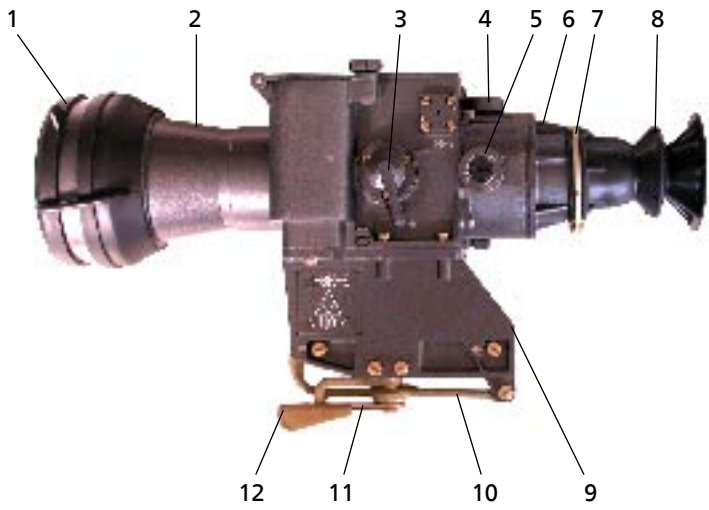
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Appendix A

Illustration list

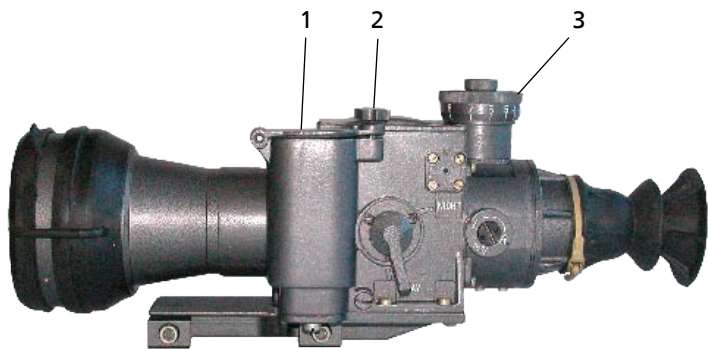
Picture 1. The sight

Picture 2. The sight with Picatinny rail



1 – light filter; 2 – objective; 3 – handle DAY/NIGHT; 4 – switching mechanism;
5 – R↔L; 6 – accumulator NLZ-09; 7 – cover; 8 – latch; 9 – mount; 10 – mount;
11 – latch; 12 – handle

Picture 1 – **The sight**



1 – battery compartment cap; 2 – screw; 3 – elevation screw

Picture 2 – **The sight with Picatinny rail**