NPZ PK1
COLLIMATOR SIGHT
SERVICE MANUAL

CONTENTS

INTRODUCTION

This Service Manual is intended for study of the design and maintenance rules of the sight.

The manual sets forth technical characteristics and information on design and operation of the sight required for its correct use, storage, and servicing.

DESCRIPTION AND OPERATION

1 SIGHT PURPOSE

The NPZ PK1 is a collimator sight for hunting weapons (hereinafter referred to as sight) intended to provide aimed firing by day, in dusky conditions, and in the night time on highlighted targets from a weapon having a side mounting seat for sight installation.

The sight is operated at ambient temperature from minus 30 to plus 50 °C and relative air humidity of max. 95 % at a temperature of 25 °C.

2 TECHNICAL CHARACTERISTICS

Technical characteristics of the sight are given in Table 1.

Table 1

Characteristic	Value
Visible magnification, times	1
Sight angular field of view, deg	13
Exit pupil distance, mm	60
Resolution	1'

Table 1 (continued) 1

Characteristic	Value
Range of reticle aiming mark alignment:	
by vertical	±0-10
by horizon	±0-10
Weight, kg	0.6
Overall dimensions, mm	133×152×68
Aiming mark shape and color in the daytime:	
– triangle, two horizontal strokes, and one vertical stroke of white color (Figure 2)	
at night:	
– two horizontal strokes and one vertical stroke of green color (Figure 3)	
at dusk:	
– triangle and strokes A of white color, strokes B of green color (Figure 4)	

3 SCOPE OF SUPPLY

Sight	1
Wrench	1
Napkin	1
Bag	1
Service manual	1

4 SIGHT DESIGN

The sight consists of body 1 (Figure 1) and guide 2 for sight fastening on the weapon.

Arranged on the sight is lever 3 for light filter switching over and the screws of vertical ("V") 4 and horizontal ("H") 5 alignment mechanisms, covered with caps.

Applied on the body is the marking explaining operation of sight mechanisms, and also manufacturer's logotype, sight designation and serial number.

Arranged inside sight body are: light filter, objective, reticle, light source, and the mechanisms of alignment by vertical and horizon.

The body is hermetically sealed and covered with protective glasses.

The light filter is intended for light flux attenuation to ensure sharp visibility of the reticle aiming marks in the daytime.

The light filter is engaged by setting lever 3 to position "ON" against stop. With lever 3 set to position "OFF" against stop, the light filter is removed from the sight field of view.

The alignment mechanisms are intended for sight-to-weapon matching and can be shifted incrementally through fixable positions.

At a distance of 100 m, a turn of aligning screw by one click provides aiming mark shift by 3 cm.

Arrow "D↔U" indicates the direction of aiming mark shifting by vertical: "D" – downward shift; "U" – upward shift.

Arrow "L↔R" indicates the direction of aiming mark shifting by horizon: "L" – shift to the left; "R" – shift to the right.

Guide 2 has a mounting seat with clamp assembly for installation on the weapon rail.

The clamp assembly consists of latch 6, slider 7, and nut 8.

The reticle aiming mark is constantly highlighted by an integrated light source (a tritium light element) and with natural light through protective glasses of the body.

Shape and color of the aiming mark differ depending of the time of day:

– in the daytime (Figure 2), it is two horizontal strokes, one vertical stroke, and a triangle, all of white color;

– in the night time (Figure 3), it is two horizontal strokes and one vertical stroke, all of green color;

– at dusk (Figure 4), it is four horizontal strokes, a triangle, and two vertical strokes.

The triangle and strokes A are of white color, and strokes B are of green color.

The wrench is intended for sight alignment.

The napkin is intended for cleaning of outer surfaces of the optical parts.

5 INTENDED USE

5.1 Operating Limitations

To ensure reliable operation of the sight, it is necessary to observe the following rules:

– study the service manual;

– protect the sight from shocks and damage;

– do not touch optical parts with your hands.

5.2 Preparing Sight for Use

When preparing the sight for use, proceed as follows:

– withdraw the sight from bag;

– wipe the sight and outer optical surfaces with napkin.

5.3 Mounting Sight on Weapon

5.3.1 To mount the sight on a weapon, proceed as follows:

– turn latch 6 forward against stop;

– align the mounting seat of guide 2 with the weapon rail and shift the sight forward all the way against stop;

– turn the latch rearward until complete fixation of its lug on the guide stop.

The sight shall be firmly (without rocking) retained on the weapon rail.

5.3.2 If there is even slight rocking of the sight, adjust the clamp assembly. To that end:

– turn the latch forward and remove sight from the weapon;

– force slider 7 up, releasing nut 8;

– turn the nut to such an angle which will ensure sight firm fastening on the weapon;

– set the slider back in place in such a way that its locking lug enters a slot in the nut.

Check sight mounting on the weapon as per 5.3.1 and repeat clamp assembly fitting if necessary.

5.4 Aligning Sight on Weapon

5.4.1 Perform sight alignment proceeding as follows:

– aim weapon through the sight at an aiming point 100 m away;

– make a shot;

– If the aiming point coincides with the point of impact, the sight is considered aligned.

5.4.2 If the aiming point and the point of impact are offset by more than 5 cm, align the sight proceeding as follows:

– unscrew the caps of the aligning screws;

– determine a required number of aligning screws' clicks by vertical and horizon, taking into account that one click shifts the aiming point by 3 cm;

– turn screw "V" (vertical shift) along the arrow to a required number of clicks towards sign "D" (down) if the point of impact is above the aiming point, or towards sign "U" (up) if the point of impact is below the aiming point;

– turn screw "H" (horizontal shift) along the arrow to a required number of clicks towards sign "R" (right) if the point of impact is to the left of the aiming point, or towards sign "L" (left) if the point of impact is to the right of the aiming point;

– screw in the caps back against stop.

5.4.3 Check sight alignment accuracy and repeat steps 5.4.1, 5.4.2 if necessary.

5.5 Operating the Sight

Aim weapon at a target in the daytime and at dusk against the reticle aiming mark triangle (Figures 2, 4), and in the dark, by having the target symmetrically located between the horizontal strokes (Figure 3).

6 MAINTENANCE AND STORAGE RULES

6.1 Store the sight in heated rooms with air temperature through the year ranging from 5 to 35 °C and relative humidity not exceeding 85 %.

6.2 It is recommended to store the sight in a bag.

6.3 Wipe the outer optical surfaces with a clean soft cloth; remove grease stains and deposits with cotton wool wetted with alcohol.

In the course of storage and operation, protect the sight from scratches.

7 SAFETY REQUIREMENTS

7.1 The sight comprises a tritium light element serving as a light source.

Damaging of the light element ampoule does not pose a hazard to people in the immediate vicinity of the light source, both outdoors and indoors, unless ampoule splinters have penetrated an open wound. In the latter case, thoroughly wash the injured person's wound and seek medical aid. Air the room for 0.5 hours.

Collect the wreckage materials and wet-clean the room.

7.2 While shooting, do not have the eye closer than 60 mm to the sight so as to avoid injury.

7.3 During operation, check the sight for reliable fastening on the weapon.

8 ACCEPTANCE CERTIFICATE

NPZ PK1 collimator sight, serial No _____ is manufactured in accordance with technical documentation and is fit for operation.

Date of issue _____

Signatures _____

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APPENDIX

List of Illustrations


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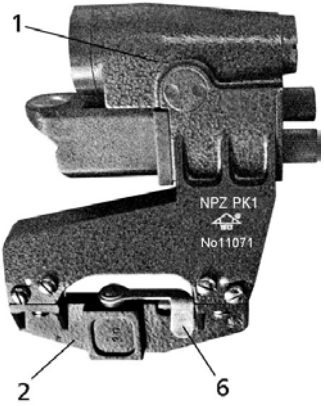
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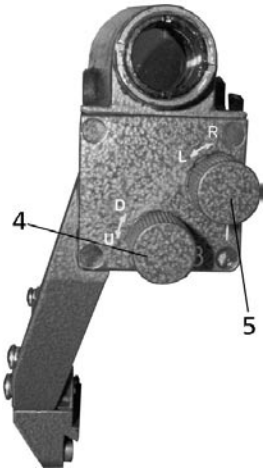

1 – body; 2 – guide; 3 – lever;
4 – alignment by vertical;
5 – alignment by horizon; 6 – latch;
7 – slider; 8 – nut

Figure 1 – **General appearance of sight NPZ PK1**

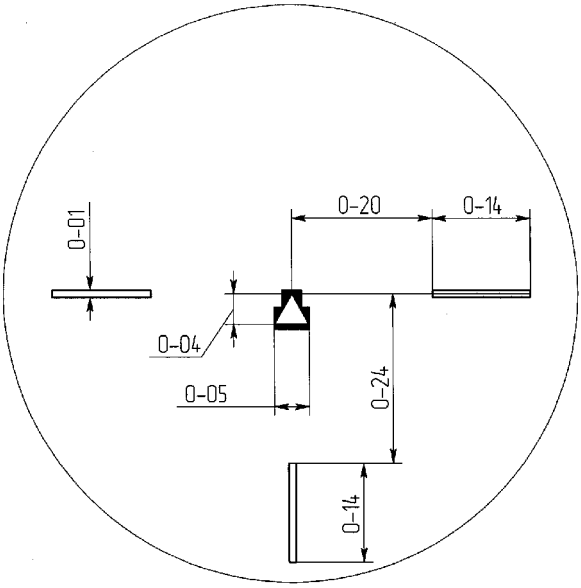

Figure 2 – **Sight field of view in the daytime**

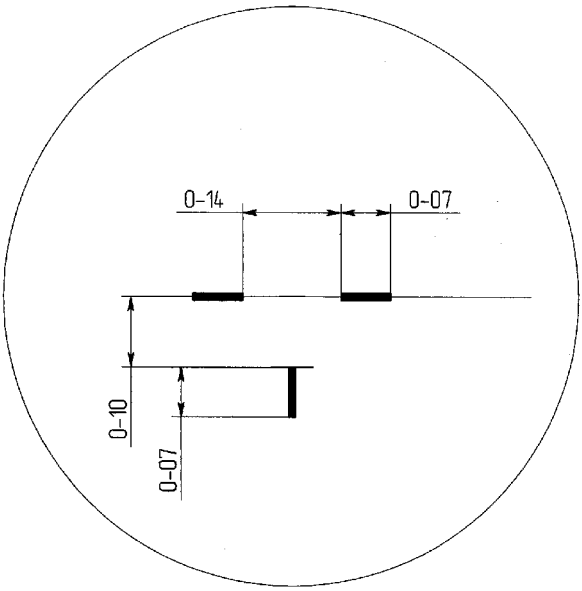

Figure 3 – **Sight field of view in the night time**

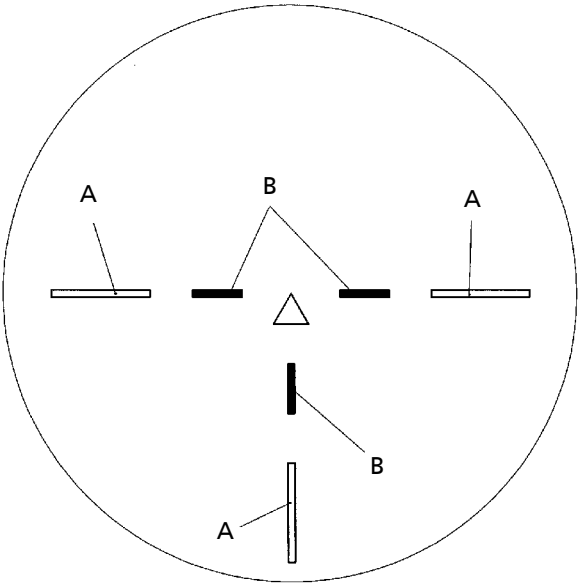

Figure 4 – **Sight field of view at dusk**