



NPZ

NOVOSIBIRSK INSTRUMENT-MAKING PLANT, JSC



OPTICAL SIGHT

P04-1 2x36P

SERVICE MANUAL

INTRODUCTION

This Service Manual is intended to help the user in studying the design and the rules of operation of the PO4-12x36P optical sight.

This Service Manual contains:

- purpose;
- technical specifications;
- information on design and operation principles of the optical sight required for proper operation and the use of its technical capabilities to the maximum possible extent;
- list of potential failures and troubleshooting procedures.

In view of the continuous work to improve the sight, its design may be subjected to some minor modifications not reflected in the Present Manual.



OPTICAL SIGHT P04-12x36P

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1 PURPOSE

The PO4-12x36P sight is designed for sight shooting during daylight with hand (hunting) weapon with the sight mounted on an up mounting seat of Picatinny type.

Illuminated reticle allows sighting in the twilight.

The sight is provided with two handwheels with scales to adjust the sight in windage and elevation planes when zeroing and shooting.

The sight is designed for outdoor use within a temperature range from minus 40 °C to plus 40 °C and a relative humidity of up to 95 % at a temperature of plus 25 °C.

2 SPECIFICATIONS

Table 1

| Description | Value | | Notes |
|---------------------------------------|-------------|-------|-------|
| Magnification, x | 4.8 | 14.5 | |
| Field of view | 3°50' | 1°17' | |
| Exit pupil, mm | 7.8 | 2.6 | |
| Eye relief, mm | 70 | | |
| Resolution limit, sec | 13 | 5.5 | |
| Power supply for reticle illumination | CR2032x1,3V | | |
| Dimensions, mm | 416x72x77 | | |
| Weight, kg, max | 0.83 | | |

3 COMPLETE SET

Table 2

| Description | Value | Notes |
|----------------|-------|--------------------------|
| Sight | 1 | |
| Eyeshield | 1 | Separated from the sight |
| Cover | 1 | |
| Box | 1 | |
| Service manual | 1 | |

4 PREPARING THE SIGHT FOR THE USE

Prior to the use, the sight needs to be installed on the weapon and adjusted.

Before mounting the sight on a weapon, put the eyeshield (included in the scope of supply) on the eyepiece of the sight.

Mounting the sight on a weapon

The sight is mounted on a weapon using special bracket in the following sequence:

- wipe the mounting seats of the sight and weapon to remove dust and dirt;
- press the bracket latches 1, 2 one at a time (Figure 1) and open (turn) the handles 3, 4;
- install the sight on the mounting seat;
- close (turn) the handles 3, 4 until the bracket latches 1, 2 are snapped;
- check secure attachment of the sight on its mounting seat.

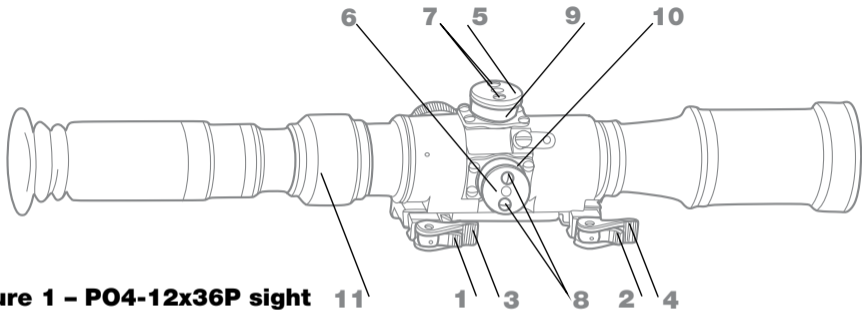


Figure 1 – P04-12x36P sight

Protective caps are not shown

- | | |
|---------------------------------|-------------------------------|
| 1,2 – bracket latches; | 6 – windage adjustment |
| 3,4 – handles; | mechanism handwheel; |
| 5 – elevation adjustment | 7, 8 – screws; |
| mechanism handwheel; | 9, 10 – scales. |

11 – changing increase handwheel.

To ensure more secure attachment of the sight, the following is required:

- by pressing bracket latches 1, 2 one at a time open the handles 3,4 on the sight when it is installed on its mounting seat;
- disengage the nuts 1,2 (Figure 2);
- by rotating the nuts 1,2 followed by closure of the handles achieve secure attachment of the sight on its mounting seat.

Adjustment of the sight on a weapon

The sight must be adjusted on a weapon after zeroing with iron sight (front sight and back sight) To do this, proceed as follows:

- secure the sight on a weapon as described in section 4.1;
- remove protective caps from scales (not shown);
- set the elevation adjustment mechanism handwheel 5 (Figure 1) of the sight at the point «1», the windage adjustment mechanism handwheel 6 - at the point «0»;
- use iron sight set to point «1» to aim weapon to the target at a distance of 100 m;

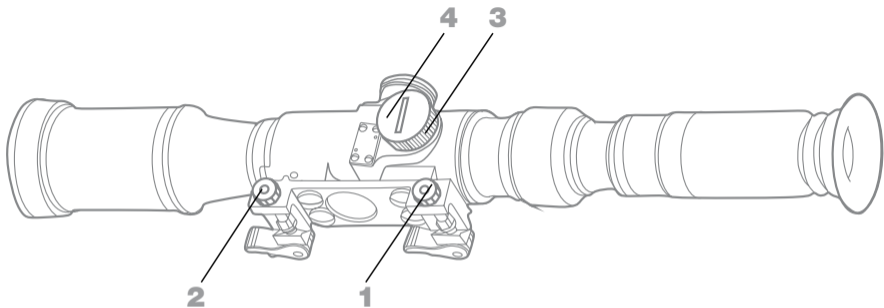


Figure 2 – PO4x24P sight

Protective caps are not shown

1, 2 – nuts;

4 – battery compartment cover.

3 – battery compartment;

- by looking through the eyepiece of the sight note the position of the aiming mark;
- the sight is considered adjusted if the aiming mark coincides with the aiming point of the iron sight;
- otherwise, unscrew the screws 7,8 (Figure 1) by 1-2 turns on elevation and windage adjustment mechanism handwheels and align the aiming mark with the aiming point of the iron sight by turning the handwheels (while holding scales 9, 10 in the initial position);
- carefully screw in the screws 7, 8 (Figure 1) of handwheels up to the stop and check again the coincidence of the sight reticle aiming mark with the aiming point of the iron sight. Repeat adjustment, if necessary;
- upon completion of the adjustment put the protective caps on the scales.

5 PROPER USE

Elevation adjustment mechanism handwheel setting must be determined experimentally according to the type of weapon and firing distance.

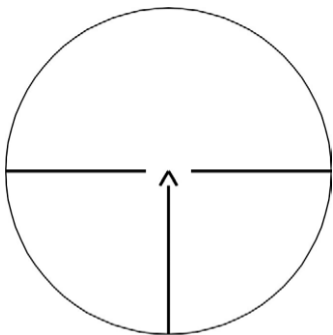


Figure 3
Field of view

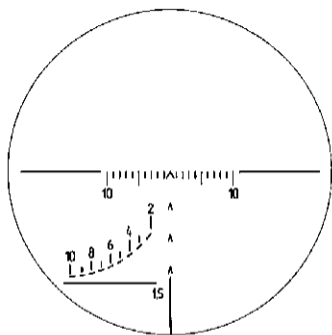


Figure 4
Field of view

Turning the elevation adjustment mechanism handwheel by one click shifts the point of impact upwards (downwards) by 5 cm for each 100 m.

Turning the windage adjustment mechanism handwheel by one click shifts the point of impact to the right (left) by 5 cm for each 100 m.

The sight can be supplied with one of the two reticle options according to Figures 3, 4.

Choosing of a target should be performed at 4x magnification. Aimed shooting is performed at a magnifications higher than 4x.

Rotate magnification change handwheel clockwise 11 (Figure 1) of counterclockwise to change magnification. Magnification is changing smoothly in the whole range.

Distance to 1.5 meter height target can be determined using the range finding scale of the sight reticle (see Figure 4) as follows:

- aim the scale at a target so as to have the target positioned between the solid horizontal line and the dotted slant line.
- the scale stroke above the target indicates the distance to this target.

The sight is equipped with reticle illumination for aiming in the twilight.

Reticle brightness can be adjusted by turning the body of battery compartment 3 (see Figure 2). The body of battery compartment 3 is marked with figures from “0” to “12”. The sight is switched on when rotating the body of battery compartment 3 in the direction of figures increasing. This direction of rotation increases brightness of the illumination, while rotation in the opposite direction decreases the brightness. The sight is switched on when figure “0” is set against the notch on the sight body.

Sight is powered from one CR2032 lithium battery (hereinafter referred to as “battery”). Install battery into the sight (Figure 2) in the following sequence:

- unscrew the battery compartment cover 4;
- insert battery into the battery compartment with “+” mark pointing outside;
- screw in the battery compartment cover 4.

The strokes of the reticle are red when the reticle illumination is on.

6 STORAGE AND MAINTENANCE RULES

Protect the sight from mechanical damage. Protective caps of the adjustment mechanism handwheels should be removed only for the use of the handwheels.

Wipe the outer optical surfaces with clean soft cloth, remove oil spots and thin coatings with cotton wool wetted with alcohol.

Protect optical parts of the sight from scratches during storage and operation.

The sight with installed protective cap should be stored in box.

The box is included in the scope of supply of this sight.

Optimum storage conditions are as follows: air temperature from 5 to 40 °C at air relative humidity no more than 85 %. Daily fluctuations of temperature in the storage facility should not be greater than 5 °C.

To protect the sight from mechanical and climatic exposure use the cover.

7 SAFETY REQUIREMENTS

During the sight operation, ensure secure attachment of the sight on a weapon. If the sight sways, it is necessary to adjust parts of the mounting bracket according to section 4.1.

8 POTENTIAL FAILURES AND TROUBLESHOOTING PROCEDURES

Table 3

| Potential failure | Probable cause | Remedy actions |
|---|----------------|--|
| Reticle strokes do not light up when the sight is switched on | Faulty battery | Change the battery by new one in accordance with section 5 |

9 ACCEPTANCE CERTIFICATE

PO4-12x36P sight, serial number _____, is manufactured and accepted in accordance with the requirements of mandatory state requirements, current technical documentation and is found fit for operation.

Date of issue _____

Signatures _____

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