Binocular microscope

БМ-51-2

CERTIFICATE

33.23.702 ПС

BINOCULAR MICROSCOPE

БМ-51-2

C E R T I F I C A T E

33.23.702 ПС

1. PURPOSE

The binocular microscope БМ-51-2 is designed for examination of the surfaces of small objects: engravings, relieis, scratches, rubtures of threads, etc.

The microscope may be used for visual observation at research institutes, schools and in various industrial branches. The microscope may be used by geologists, geodesists, archaeologists, biologists physicians, veterinaries.

Due to the high stereoscopic effect of the binocular microscope the observer can easily examine the researched objects: their form, structure etc., which a monocular microscope cannot provide.

Comparatively large field of view of binocular microscope and large distance to investigated object ensure convenient operation with small details required, for example, when assembling the semiconductor instruments.

2. SPECIFICATIONS

Magnification	8.75*
Field of view, mm	25
Working distance, mm	140

Overall dimensions, mm

height	300
length of base	170
width of base	125
Mass, kg	1.55

3. DELIVERY SET

1. Microscope (with lens 0.7× and eyepiece 12.5×)	1
2. Case	1
3. Cloth	1
4. Package	1
5. Certificate	1

4. DESIGN AND OPERATING PRINCIPLE

The binocular microscope БМ-51-2 consists of two identical optical systems. Each system has a lens, prism and eyepiece. The axes of both systems are adjusted at an angle of 12° relative to each other.

The apex of this angle coincides with the plane of the object under examination. Each of the two systems produces a separate image.

Due to the fact that the instrument is binocular type, the resultant image is stereoscopic.

The binocular microscope БМ-51-2 (fig. 1) consists of the base *1*, disc *2*, bracket *7*, optical head.

The optical head consists of the eyepiece *5* and draw-tubes *6*.

The lenses of both optical systems are mounted in a common cell located in the bottom part of the bracket. The prisms of each optical system are held in separate draw-tube *6*. The top caps of the draw-tubes carry the eyepieces *5*.

Interpupillary distance is adjusted by turning each draw-tube through a certain small angle around the axis of the system.

The optical head with bracket can be moved along the pillar. The handwheel *4* should be eased on and tightened up again after the optical head has been brought to the desired position.

Fine focusing of the microscope is done by adjustment of the handwheels *3*.

Both eyepieces of the microscope have additional focusing which is necessary in case the observer's eye dioptrics is different.

5. PRELIMINARY ADJUSTMENTS AND OPERATING PROCEDURES

The room in which the microscope is operated should be free from mechanical disturbances which hamper the observation.

The investigated object should be placed on the disc *2*, in the centre of the field of view.

The object examined can be secured with clamps *8* inserted in special holes provided in the base.

Prior to starting the examination obtain the best illuminating conditions for the object.

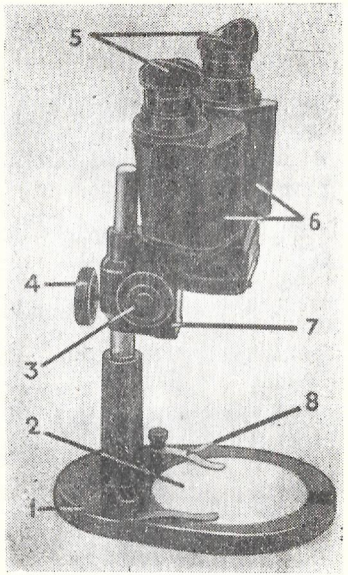

Fig. 1. Binocular microscope:
1—base; 2—disc; 3—handwheel; 4—handwheel; 5—eyepieces; 6—draw-tubes; 7—bracket; 8—clamp

Adjust the instrument to suit the observer's inter-ocular distance by turning the draw-tubes.

Obtain a rough working distance by moving the bracket along the pillar.

Final focusing of the microscope is done by means of the handwheels *3*.

The personal sighting error of the operator is compensated by additional focusing of the eyepieces.

All movement should be effected smoothly and by hand without applying undue effort or using any tools.

When inoperative the instrument should be covered by case.

6. MAINTENANCE

To prolong service life of the instrument and obtain sharp image of the object, inspect it periodically, clean the outer surfaces of optics and metal parts from dust, lubricate the friction parts.

The outer surfaces of optics should be cleaned from dust with flannel cloth.

Do not attempt to dismantle the microscope or eyepieces. The instrument should be repaired by qualified specialists only at special repair shops.

The preserving lubricants prevent metal parts of the microscope from corrosion during shipment and storage in depots.

Make use of lubricant ПВК GOST 19537-74 or ГОИ-54П GOST 3276-74.

The lubricants employed prevent the microscope from corrosion during one year after preservation provided the following storage conditions are observed:

a) the store-room must be dry and heated with an ambient air temperature from 5 to 20°C;

b) no acids, alkalis or other chemicals should be stored in the same room;

c) the instrument should be kept away from heating appliances or direct sunlight.

Depreservation. Depreserve the microscope in a dry heated room with an ambient air temperature not lower than +15°C. During depreservation remove the lubricant layer from all the surfaces using a wad of cotton wool or cloth moistened with aviation gasoline.

The microscope packed in the packing case may be transported by any kind of transportation means. Protect it from jolts and impacts which may result in maladjustment of the microscope.

7. ACCEPTANCE CERTIFICATE

The binocular microscope БМ-51-2 with serial number 811894 has been found fit for service.

М.П.

Date of manufacture 12 1981

Representative of inspection department _____
(signature)

8. PRESERVATION AND PACKING CERTIFICATE

The binocular microscope БМ-51-2 with serial number 811894 has been subjected to preservation and packed in compliance with the requirements specified in the certificate.

Date of preservation 12 1981

Term of preservation is one year

Preserved by _____
(signature)

М. П.

Date of packing 12 1981

Packed by _____
(signature)

Accepted after preservation and packing by _____
(signature)

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