STEREO ZOOM MICROSCOPE

Mod. STMPRO

USER MANUAL

FILENAME: Bel Photonics STMPRO, User manual-A4_REV2.doc

BEL Engineering srl
Electronic precision balances and scientific instruments

Via Venezia Giulia 1, 20052 Monza (MI) Italia
tel:+39 039 2006102/2005302 fax: +39 039 2006082
e.mail: info@belengineering.com www.belengineering.com

STMPRO Series Zoom Stereo Microscope is a kind of binocular or trinocular stereomicroscope, which can magnify micro objects continually and show stereo up-right images. It provides clear high-contrast image, wide field and long working distance. It can be used for observation studies in medical and health, farming and forestry, as well as public security departments, schools and scientific research institutes, and is also used for inspection, assembling and repair of tiny spare parts in electronics and precision machine industries.

I. FEATURES

1. Objectives range of zoom magnification: 0.7X - 4.5X;
2. Eyepieces field is wide and clear, field: Φ22mm; eyepiece magnification:10X
3. **Total Magnification of Microscope: 7X - 45X**
4. The binocular eyepiece tubes is inclined 45º and can be rotated 360º;
5. The adjustment range of interpupilar distance: 53-75mm;
6. The adjustment diopter of eyepiece tube: -5...+5;
7. Anti-mildew device is installed in the binocular to extend the life of instrument;
8. Transformer is out of the base of instrument to reduce electricity disturb and improve security and reliability;
9. The mode of illumination selection and brightness adjusting are very easy, There are three modes: transmitted light, reflected light and mixed light illumination;
10. Different adapters can be selected to connect a CCD camera onto the trinocular tube.

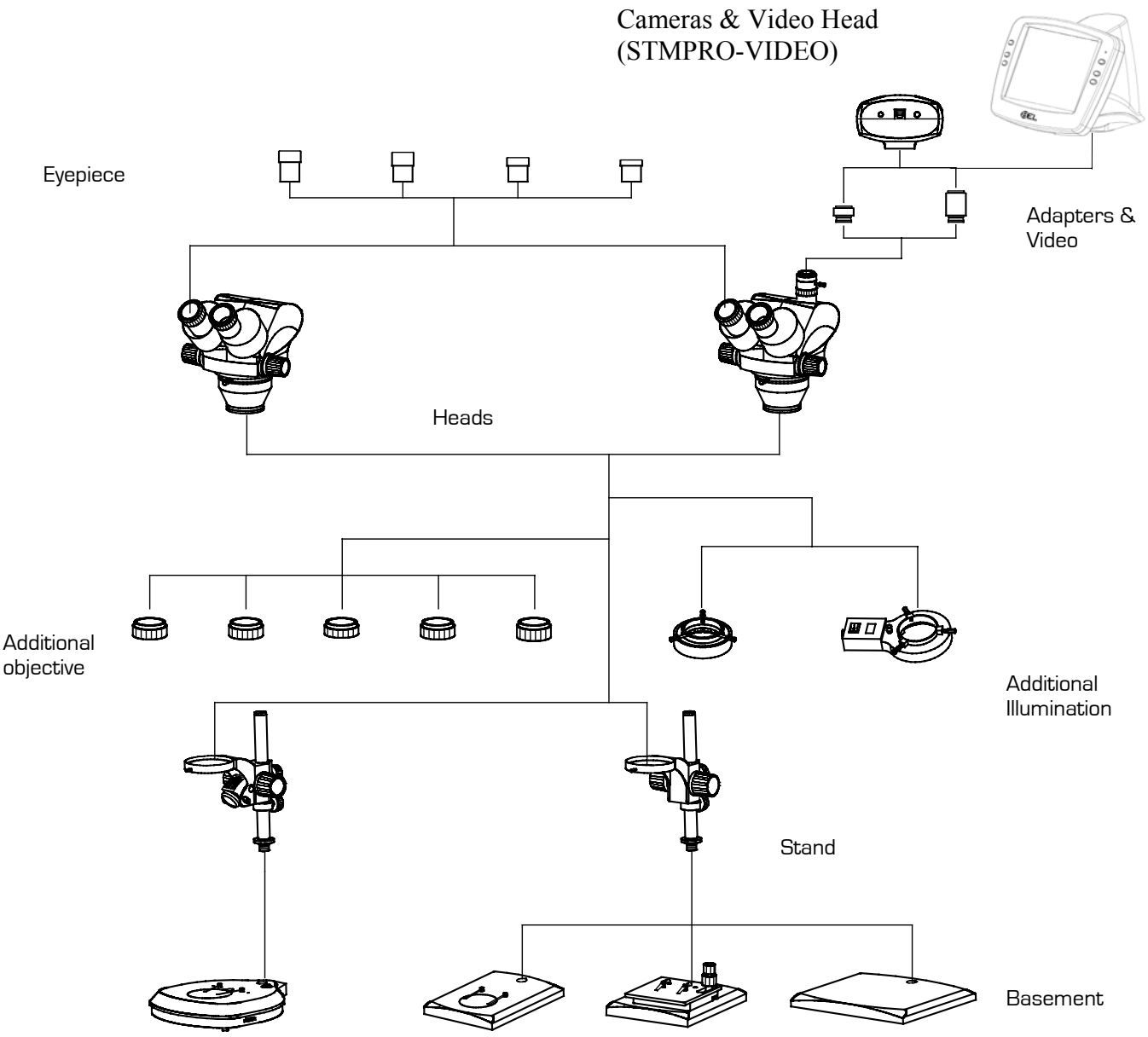
II. MAIN SPECIFICATIONS

Eyepiece type	magnification	Filed view(mm)	Focus(mm)	Remark
Wild filed view eyepiece	10X	Φ22	25	
Plan eyepiece	15X	Φ16	16.7	Optional
Plan eyepiece	20X	Φ12	12.5	Optional
Plan eyepiece	25X	Φ9	10	Optional
Dividing eyepiece	10X	Φ18	25	Optional

III. OTHER SPECIFICATIONS WITH OPTIONAL OPTICS

Objective / Eyepiece	Main frame	Additional Objective 0.5X	Additional Objective 0.75X	Additional Objective 1.5X	Additional Objective 2X	
	0.7X-4.5X	0.35X-2.25X	0.49X-3.38X	1.05X-6.75X	1.4X-9X	
WF 10X (standard)	7X-45X	3.5X-22.5	5.3X-33.8X	10.5X-67.5X	14X-90X	Total Magnification
	φ28.6～φ4.4	φ57.2～φ8.9	φ38.1～φ5.9	φ19～φ2.96	φ14.3～φ2.2	Field of view, diameter (mm)
WF 15X	10.5X-67.5X	5.3X-33.75X	7.9X-50.6X	15.8X-101.3X	21X-135X	Total Magnification
	φ21.4～φ3.3	φ42.9～φ6.7	φ28.6～φ4.4	φ14.3～φ2.2	φ10.7～φ1.7	Field of view, diameter (mm)
WF 20X	14X-90X	7X-45X	10.5X-67.5X	21X-135X	28X-180X	Total Magnification
	φ17.1～φ12.9	φ34.3～φ5.3	φ22.9～φ3.6	φ11.4～φ1.8	φ8.6～φ1.3	Field of view, diameter (mm)
WF 25X	17.5X-105X	8.8X-52.5X	13.1X-78.8X	26.3X-157.5X	35X-210X	Total Magnification
	φ12.9～φ2.1	φ25.7～φ4	φ17.1～φ2.7	φ8.6～φ1.3	φ6.4～φ1	Field of view, diameter (mm)
	88	137	103	48	29	Working distance (mm)

IV. COMPONENTS



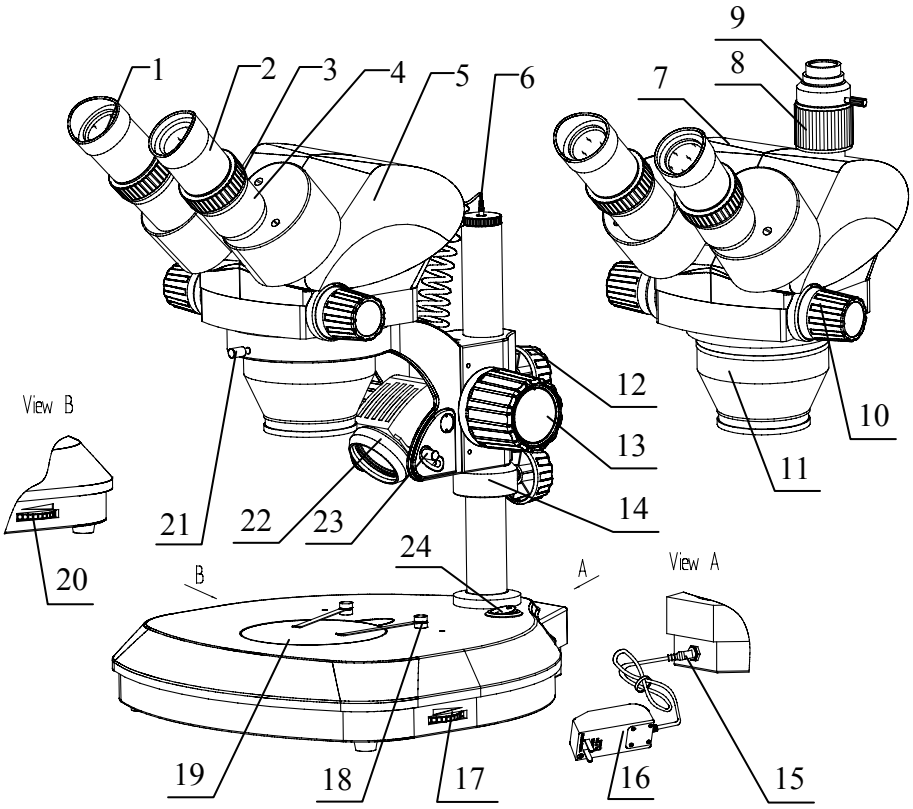
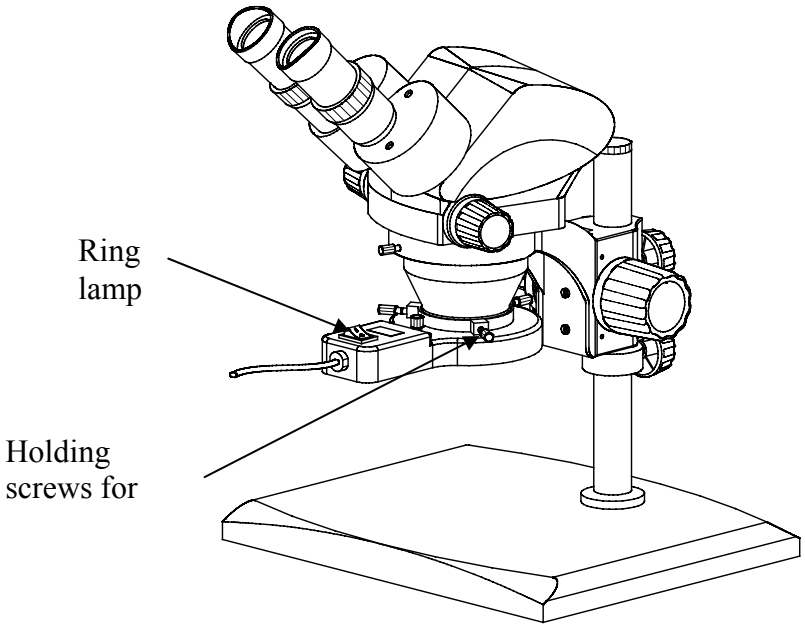


Fig.1

1. Eyepiece shade
2. Eyepiece
3. Diopter ring
4. Eyepiece tube
5. Binocular
6. Reflection illumination power plug
7. Trinocular
8. CCD adjusting tube
9. CCD adapter
10. Zoom knob
11. Objective hood
12. Holding knob
13. Focus adjustment knob
14. Backstop
15. Power plug and socket
16. Power supply
17. Transmitted light brightness adjustment knob
18. Specimen clip
19. Organic glass stage
20. Reflection light brightness adjustment knob
21. Tube of holding screw
22. Lamp cover
23. Reflection light angle adjustment screw
24. Power switch



V. OPERATION

1. Plug in power;
2. When use the model STMPRO with transmitted illumination (Fig.1), you should turn on the power switch 24 at first, then turn on the transmitted light brightness adjusting knob 17, which means the transmitted light working. When use it with reflected illumination, you should plug the Reflection illumination power plug 6 and turn on the reflected light brightness adjusting knob 20, which means the reflected light working, and then adjust the angle and brightness of reflected illumination to satisfy your needs. When use it with mixed illumination, you should turn on the both light brightness adjusting knob and adjust their brightness to obtain satisfactory mixed illumination;
3. If you want to change the position of observation, you can loose the tube of holding screw 21, then turn the binocular or trinocular in any angle which you need, then tighten the screw 21 again;
4. Turn the both diopter ring 3 to "0" and zoom knob 10 to 4.2X, observe with your right eye and turn the focus adjustment knob 13 to make the image of specimen clear, then observe with your left eye and adjust it's diopter, no adjusting focus adjustment knob 13, to make the image of specimen clear;
5. Turn the zoom knob 10 from 4.2X to 0.7X, if the image isn't clear, you should observe the left and right eyepiece tube with respective eye and adjust respective diopter to make image clear, then turn the zoom knob 10 to 4.2X again, if the image isn't clear , you should adjust the focus adjustment knob 13 to make the image clear. According to the adjustment above, you can obtain a clear and continue image from 4.2X to 0.7x;
6. Observes the image with both eyes, adjust the interpupillary distance of the eyepiece tube 4 until the both field of view can be superposition;
7. When use the trinocular, you can connect the CCD camera to trinocular with CCD adapter 9. You should Observe with both eyepieces and adjust according of "**the operation 4 and 5"** until the image clear, then you can observe the monitor, if the monitor image isn't clear, you should adjust the CCD adjusting tube 8 to make the image clear. If the image position on the monitor can't satisfy you need, you should loose the CCD adapter holding screw and turn CCD adapter 9 to change the angle of image on the monitor to satisfy your need, then tighten the holding screw again;
8. If you need the accessorial big objective, you can turn it into objective hood 11;
9. If you need the annular fluorescence illumination, you can connect it to objective hood 11 with holding screw.

VI. EXCHANGE THE LAMP

1. Reflected illumination: unplug the power supply and turn off the power switch, loosen off lamp cover, pull out the bad lamp and then install a new lamp, tighten the lamp cover again; (Fig.1)
2. Transmitted illumination: remove Organic glass stage, pull out the bad lamp, then install a new lamp again;
3. Annular fluorescence illumination: loose the annular fluorescence illumination holding screw and take off the bad and install a new, tighten the screw again.

VII. MAINTENANCE

1. Sweep the lens

Sweep the lens by lens tissue or soft fabric immersed with mixed liquid of alcohol/ether or diethyl benzene. Cleaning the oil on the 100X objective whenever finish operating.

2. Clean the painted parts

The dust on the painted parts can be removed by gauze, for the grease spots, the gauze immersed slightly with aviation gasoline is recommended. Do not use organic solvents such as alcohol, ether or other thinner etc, for cleaning the pointed parts or plastic components.

3. Avoid disassembling the microscope

Being a precise instrument, do not disassemble the microscope casually that may cause serious damage to its performance.

4. Being not used

Cover the microscope with polymethyl methacrylate or polyethylene and places where there is dry and modules. Suggest that storage all objectives and eyepieces in closed container with drying agent.

CERTIFICATE No. 42304Rev.1
According to Art. 10 clause 2 of Electromagnetic Compatibility Directive 89/336/EEC as amended by 92/31/EEC and 93/68/EEC

CERTIFICATO N°42304Rev.1
In accordo all'Art. 10 paragrafo 2 della Direttiva Compatibilità Elettromagnetica 89/336/EEC come modificata da 92/31/EEC e da 93/68/EEC (recepimento italiano D.L. n. 615 del 12 Novembre1996)

Equipment *Apparato*	**LABORATORY BIOLOGICAL MICROSCOPE**
Applicant *Richiedente*	BEL Engineering S.r.l. Via Venezia Giulia, 1 20052 Monza (MI) Italia
Manufacturer *Costruttore*	BEL Engineering S.r.l. Via Venezia Giulia, 1 20052 Monza (MI) Italia
Model/type *Modello / Tipo*	**BIOVIDEO**
Ratings *Dati tecnici*	100-240 Vac, 50-60Hz
Additional information *Informazioni aggiuntive*	---
Variants *Varianti*	BIO2; L3000; L135; L1600; L2000; XDS; XTL; XTC; XTX
Certificate referred to TCF *Certificato riferito al TCF*	No.: 01 Issued by/Redatto da: BEL Engineering S.r.l. Rev. No./ Rev. n°: Rev1.2 Date of issue/Data di emissione: 08 February 2006 Pages/Totale pagine: 256

THE A.M. EQUIPMENT COMPLIES WITH THE REQUIREMENTS OF THE COUNCIL DIRECTIVE 89/336/EEC as amended by 92/31/EEC and 93/68/EEC.

IL SOPRA INDICATO DISPOSITIVO SODDISFA I REQUISITI DELLA DIRETTIVA 89/336/EEC COME MODIFICATA DA 92/31/EEC E DA 93/68/EEC

The certificate is valid 10 years provided that all signed certification conditions are complied with, and that modification to product or TCF is notified to Nemko SpA for acceptance prior to implementation. The validity time may be reduced in case new standards are made applicable.
Il certificato è valido per 10 anni, sempre che tutte le condizioni di certificazione siano soddisfatte, e che qualsiasi modifica al prodotto o al TCF sia notificata a Nemko S.p.A. per accettazione prima dell'implementazione. Il tempo di validità potrà essere ridotto nel caso in cui nuove norme diventassero applicabili.

Date of issue: **2006-03-15**
Data di emissione:

Nemko S.p.A.
Certification Dpt.
Alberto Reati

This document is composed by 1 page
Questo documento è composto da 1 pagina

Nemko Spa
Via Trento e Trieste, 116
I - 20046 Biassono (MI)

T +39 03922012.01 r.a.
F +39 0392753240

www.nemko.com
www.nemko.it

CONFORMITY DECLARATION

We, Bel Engineering s.r.l. Via Venezia Giulia, 1 Monza (MI) ITALY ,

declare under our exclusive responsability that Microscopes and Microscopes cameras Models:

BIO1, BIO2, BIO3, BIO4, BIO5, BIOVIDEO, STMPRO, STMSTUDENT, STMBASIC, TZM, INV2, MTM, DV-1300, DV-3000, DV-33C, 63X11H, BVM100, MC1

this declaration refers to, are in compliance with the following rules :

EN 55011 and EN 50082-1

according to 89/336/CEE directive.