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# *SX80/SX100*

## **User Guide**

SX80/SX100 Stereo Zoom Microscope



## SX80/SX100 Stereo Zoom Microscope

Vision Engineering manufacture a wide range of patented optical systems, offering fatigue-free viewing with superb hand-eye co-ordination, for improved quality and productivity.

To achieve the most from this precision instrument, please read the enclosed assembly instructions, usage and maintenance guidelines.

## Safety Statement

### Bench stand

#### Electrical Supply

- Voltage: Electrical description: 230VAC/115VAC 50Hz/60Hz 20W
- Impulse withstand (over voltage):400V

#### Environmental Conditions

- Indoor use only
- Maximum altitude: 2000M above sea level
- Ambient operating temperature: between 5°C and 40°C
- Storage temperature: between 0°C and 55°C centigrade for 3 months without any adverse effects
- Relative humidity specification: Operating temp up to 31°C: 80%, 34°C: 70%, 37°C: 60% and 40°C: 50%
- Mains voltage supply fluctuations not to exceed  $\pm 10\%$  of nominal voltage
- If equipment is not used in a manner as specified, protection provided by the equipment may be impaired
- The product should be located such that the power supply can be unplugged in the event of an emergency

### LED Ringlight

#### Electrical Supply

- Voltage: Electrical description: 100-240VAC 50/60HZ 280mA

#### Environmental Conditions

- Indoor use only
- Ambient operating temp: between 0°C and 40°C
- Storage temperature: between 0°C and 40°C for 3 months without any adverse effects
- Relative humidity specification: Operating temp up to 45°C: 80%, 28°C: 70%, 20°C: 60% and 16°C: 50%
- Mains voltage supply fluctuations not to exceed  $\pm 9\%$  of nominal voltage
- If equipment is not used in a manner as specified, protection provided by the equipment may be impaired
- The product should be located such that the power supply can be unplugged in the event of an emergency



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## SERVICE RECORD

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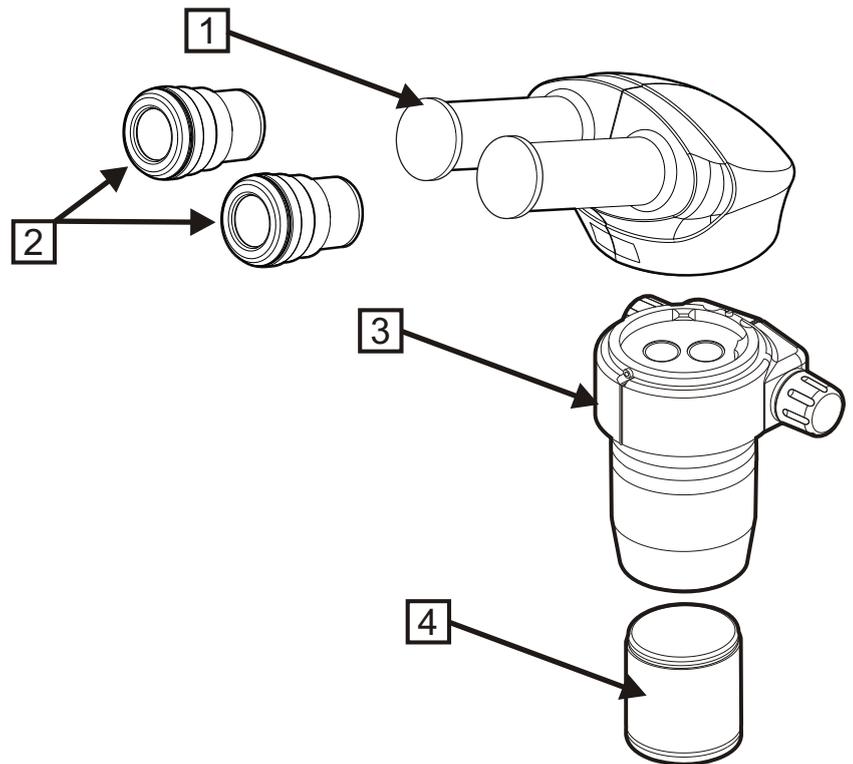
## WARRANTY

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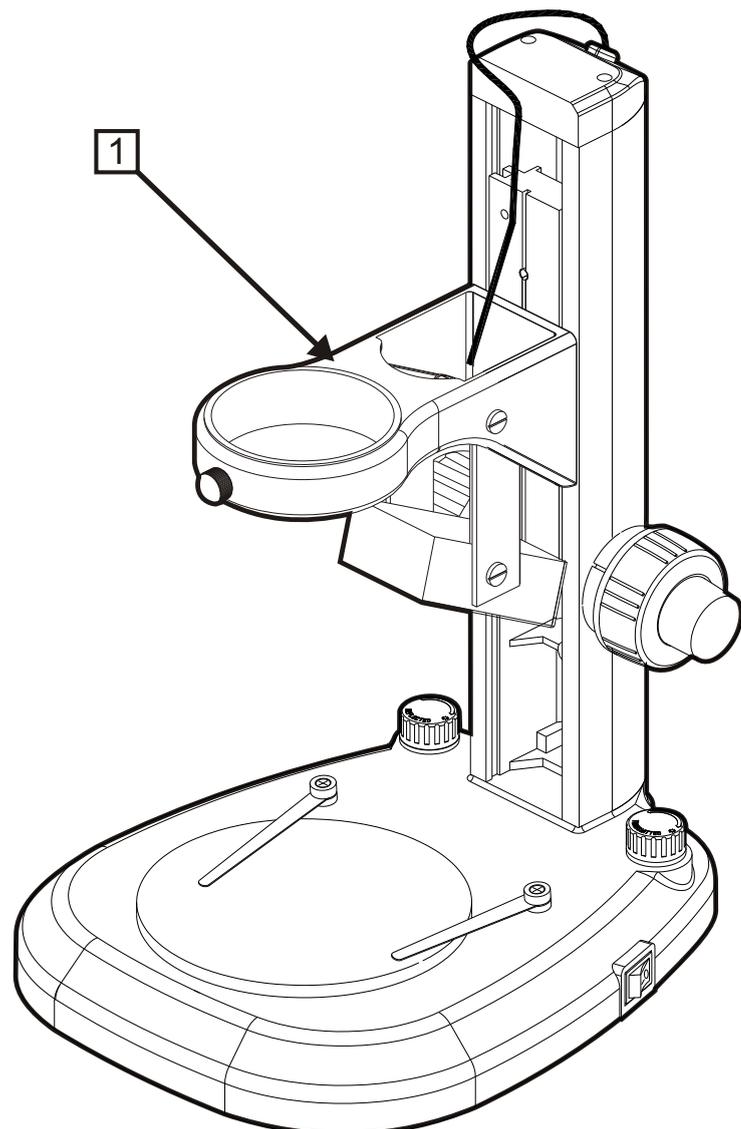
## Head

- 1 Binocular head
- 2 Eyepieces
- 3 Zoom body
- 4 Objective



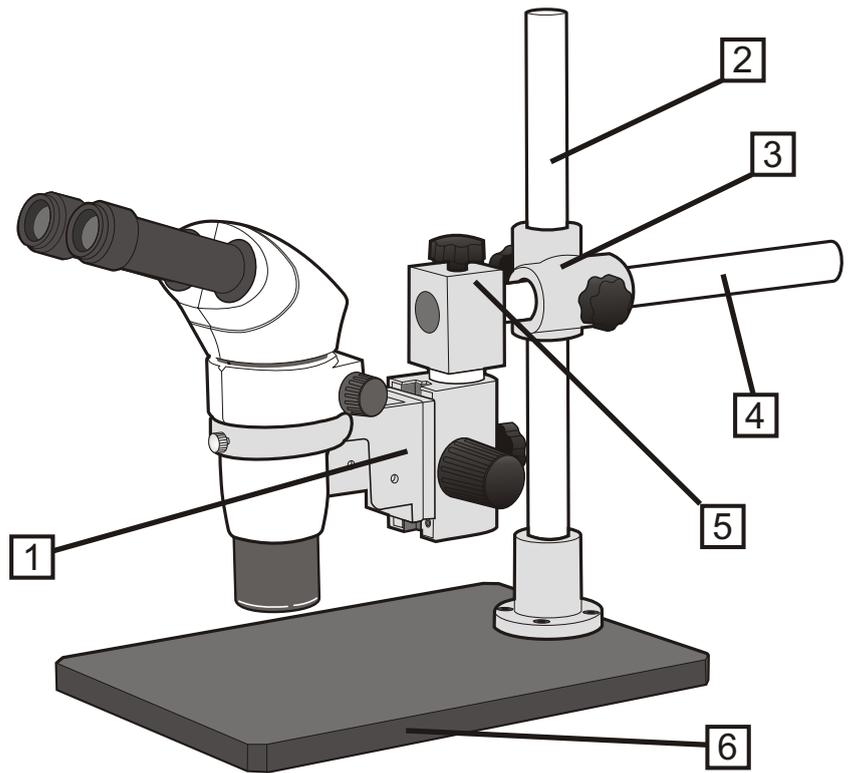
## Stand

- 1 Column & Stand
- 2 Mains lead (not shown)
- 3 Glass stage insert (not shown)
- 4 Black/white stage insert (not shown)
- 5 Spare fuses (not shown)
- 6 Hexagonal key (not shown)



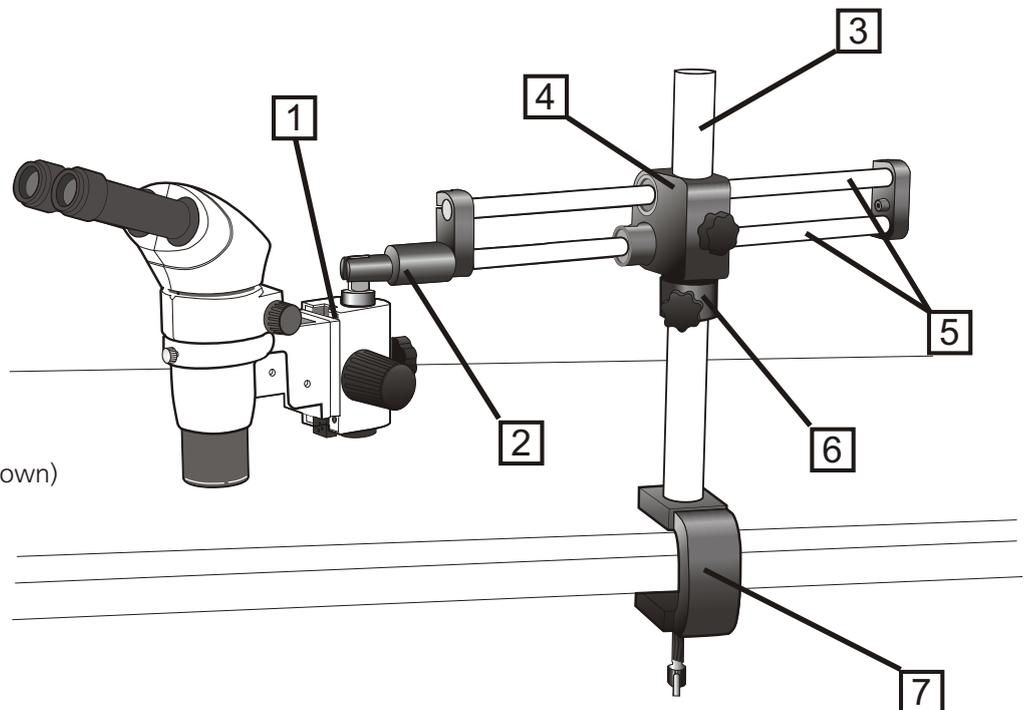
## Boom stand

- 1 Focusing arm
- 2 Vertical bar
- 3 Boom clamp
- 4 Horizontal bar
- 5 Focusing clamp bolt
- 6 Base
- 7 Hexagonal key (not shown)



## Dual-arm boom stand

- 1 Focusing arm
- 2 Focusing clamp bolt
- 3 Vertical bar
- 4 Boom clamp
- 5 Dual horizontal bar
- 6 Securing collar
- 7 Clamp  
OR Platform base (not shown)



## Optional accessories

- 0.5x C-mount adaptor
- C-mount camera adaptor
- T-mount camera adaptor
- 20x/13 Eyepieces
- Eye cups
- Graticule
- Objective 0.5x
- Objective 2.0x
- Polarisation kit
- Stage micrometer
- Floating stage
- LED Ringlight
- Photographic attachment
- Double iris diaphragm

## Optical data

SX80			
Eyepieces	Objective Lens	Zoom Range	Working Distance
x10/22 F.N.	x0.5	x4 - x32	130mm
x10/22 F.N.	x1.0	x8 - x64	78mm
x10/22 F.N.	x2.0	x16 - x128	32.5mm
x15/16 F.N.	x0.5	x6 - x48	130mm
x15/16 F.N.	x1.0	x12 - x96	78mm
x15/16 F.N.	x2.0	x24 - x192	32.5mm
x20/13 F.N.	x0.5	x8 - x64	130mm
x20/13 F.N.	x1.0	x16 - x128	78mm
x20/13 F.N.	x2.0	x32 - x256	32.5mm

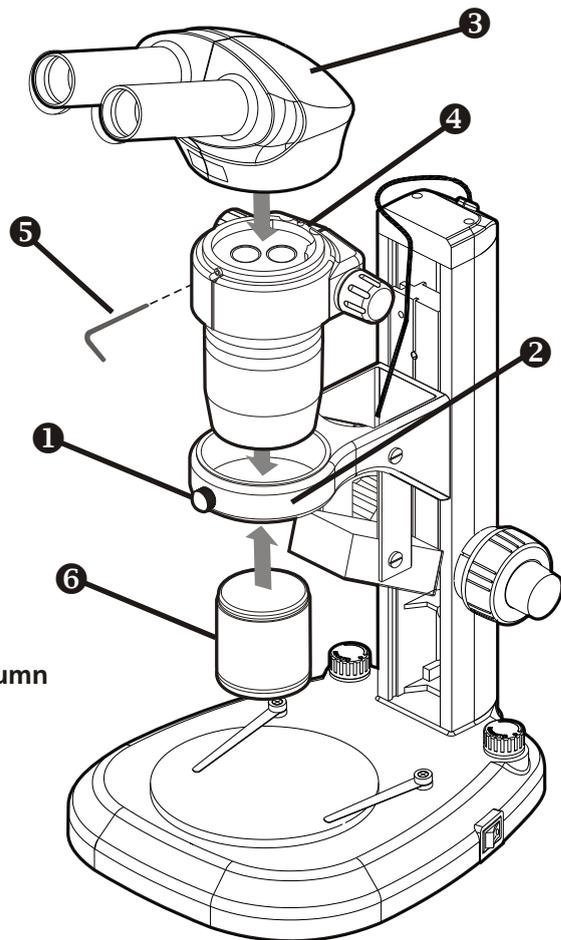
SX100			
Eyepieces	Objective Lens	Zoom Range	Working Distance
x10/22 F.N.	x0.5	x4 - x40	130mm
x10/22 F.N.	x1.0	x8 - x80	78mm
x10/22 F.N.	x2.0	x16 - x160	32.5mm
x15/16 F.N.	x0.5	x6 - x60	130mm
x15/16 F.N.	x1.0	x12 - x120	78mm
x15/16 F.N.	x2.0	x24 - x240	32.5mm
x20/13 F.N.	x0.5	x8 - x80	130mm
x20/13 F.N.	x1.0	x16 - x120	78mm
x20/13 F.N.	x2.0	x32 - x320	32.5mm

## Head attachment

Ensuring all components are clean and dust-free, attach the binocular head as follows:

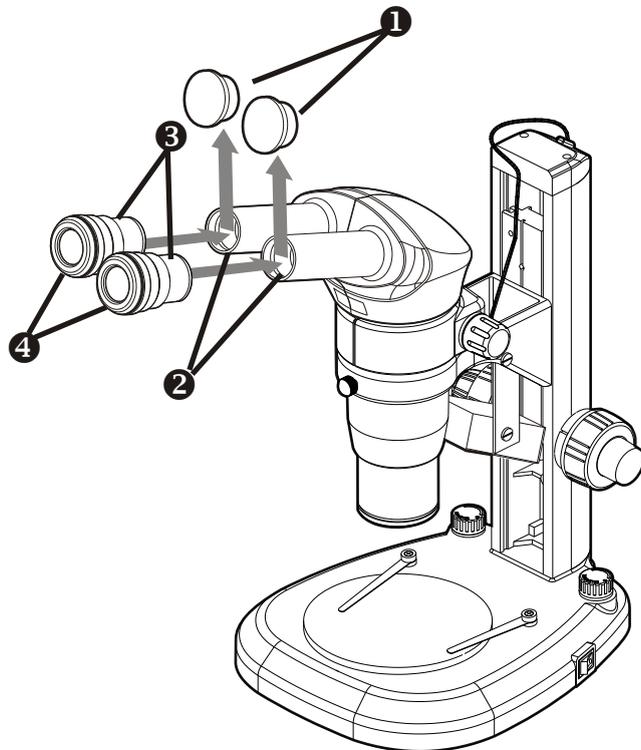
- ▶ Loosen the securing screw ❶.
- ▶ Lower the head assembly into the stand's head location ring ❷.
- ▶ Locate the binocular head ❸ on to the zoom body ❹ and secure it in place with the hexagonal key ❺.
- ▶ Tighten the securing screw.
- ▶ Screw the objective lens ❻ up into the zoom assembly.

**Warning:** With the head in place, always support the column and base when moving the instrument.



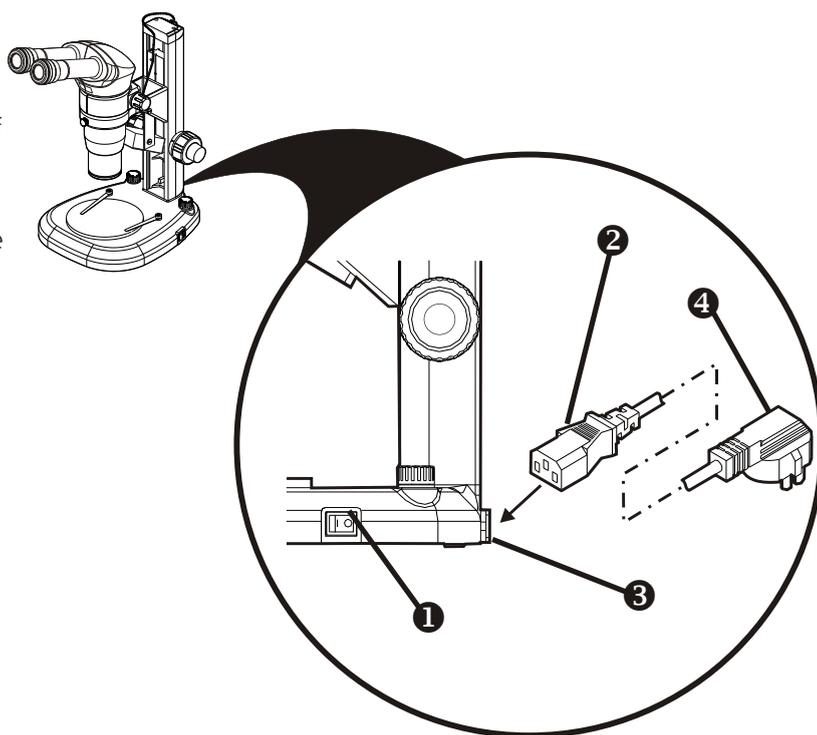
## Eyepiece attachment

- ▶ Remove the protective caps ❶ from the eyepiece tubes ❷.
- ▶ Insert the eyepieces ❸ into the eyepiece tubes.
- ▶ The rubber cups ❹ on the eyepieces are to reduce interference caused by ambient lighting but can be removed when wearing glasses.



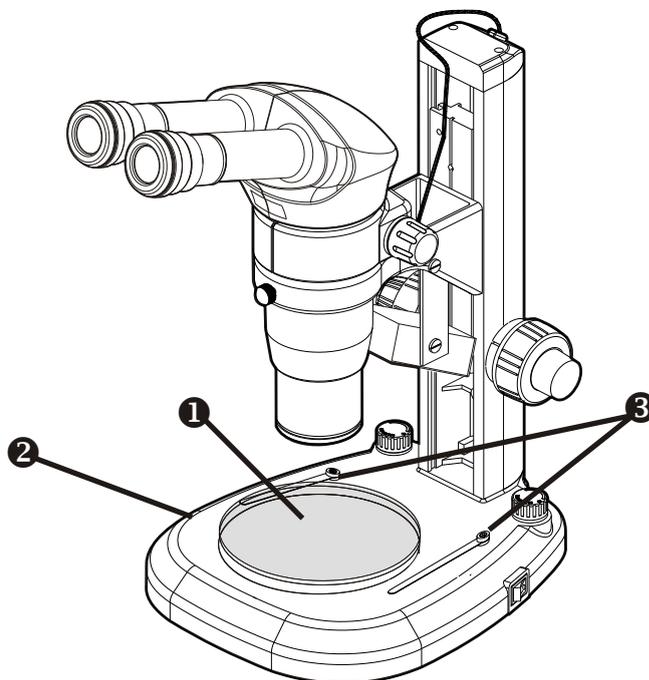
## Power cable connection

- ▶ Turn the power switch **1** to the Off (O) position.
- ▶ Plug the IEC connector **2** into the rear of the SX80/SX100 stand **3**.
- ▶ Connect the mains plug **4** into a suitable mains power socket.



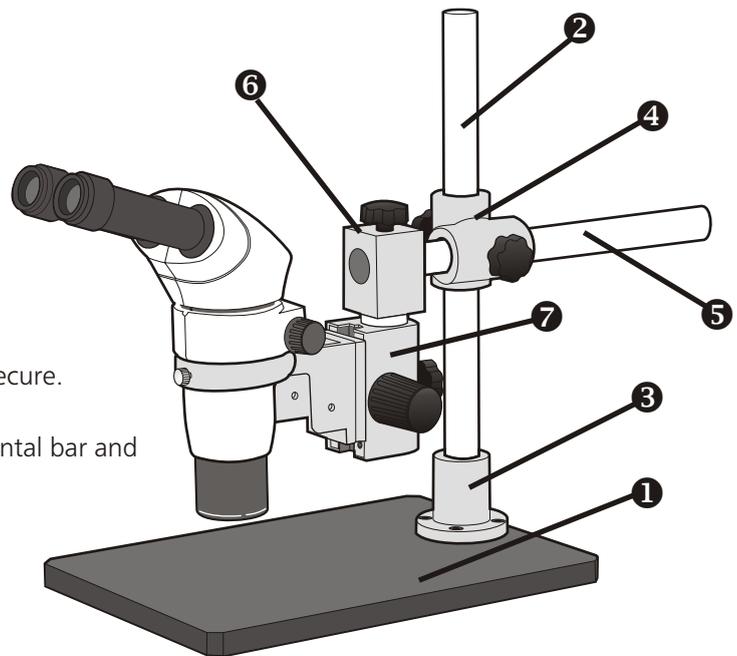
## Stage glass attachment

- ▶ Place the stage glass **1** into the stand base **2**.
- ▶ Use the two clamps **3** to secure slides when in use.



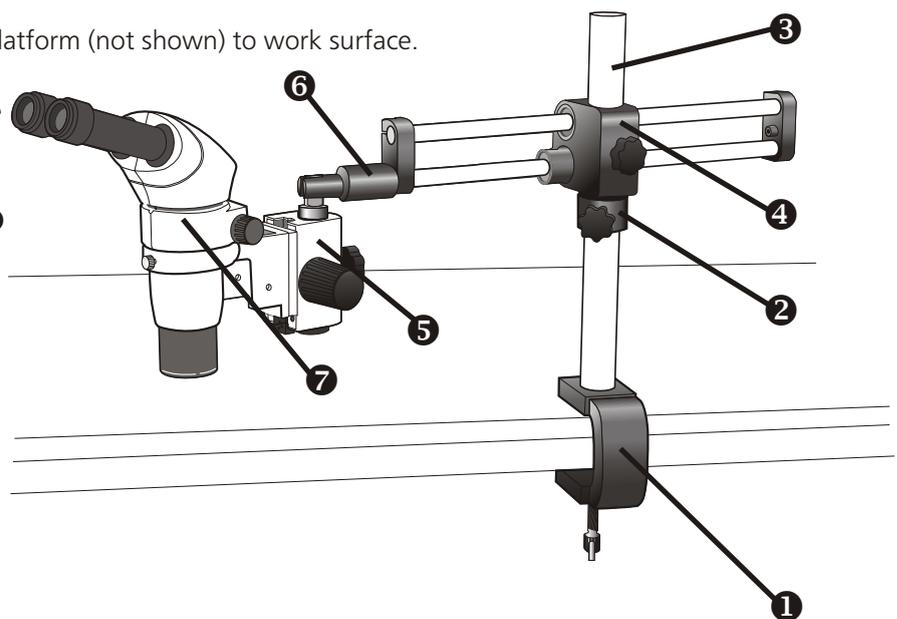
## Boom stand

- ▶ Place base **1** on a flat and even surface.
- ▶ Insert the vertical bar **2** into support **3** and tighten screws.
- ▶ Slide clamp **4** over the vertical bar and secure.
- ▶ Slide horizontal bar **5** through the clamp and secure.
- ▶ Attach the focusing arm mount **6** to the horizontal bar and secure.
- ▶ Attach the focusing arm **7** to focusing arm mount and secure.
- ▶ Position and secure head.



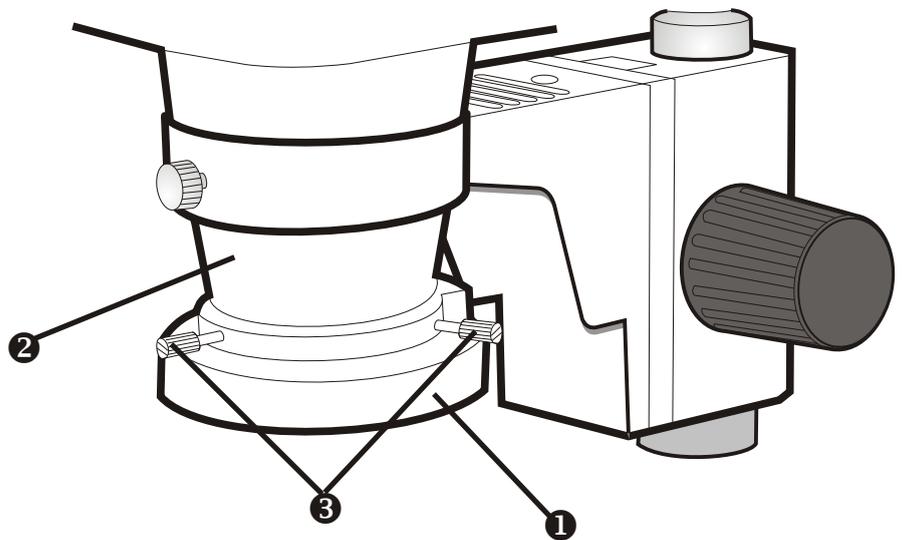
## Dual-arm boom stand

- ▶ Secure bench mount clamp **1** or platform (not shown) to work surface.
- ▶ Slide the securing collar **2** over the vertical bar **3** and secure.
- ▶ Slide dual-arm & clamp assembly **4** over the vertical bar and secure.
- ▶ Connect focus assembly **5** to the focus arm link **6** and tighten the screw at the back and the nut at the bottom until secure.
- ▶ Insert head assembly **7** into the focus assembly and secure.



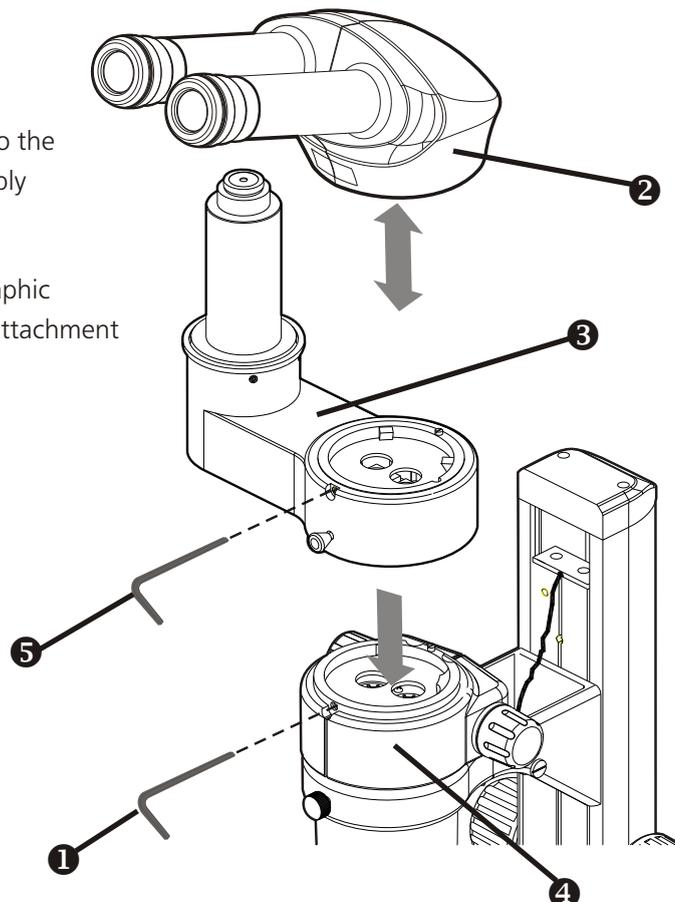
## LED ringlight (optional)

- ▶ Slide the LED ringlight **1** over the bottom of the microscope objective lens **2**.
- ▶ Secure with screws **3**.
- ▶ Connect power lead, and plug in.



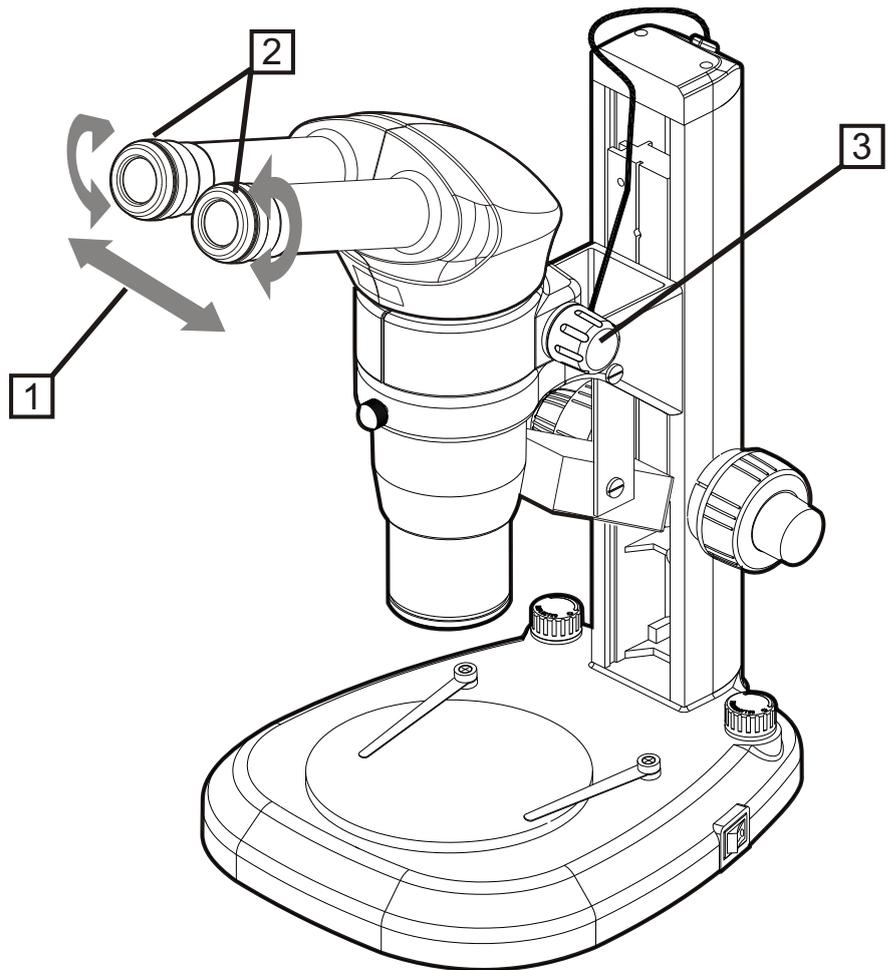
## Photographic attachment

- ▶ Loosen the head assembly securing screw **1** and remove the eyepiece body **2**.
- ▶ Place the photographic attachment **3** on to the zoom body **4** and tighten the head assembly securing screw.
- ▶ Place the eyepiece body on to the photographic attachment and tighten the photographic attachment securing screw **5**.



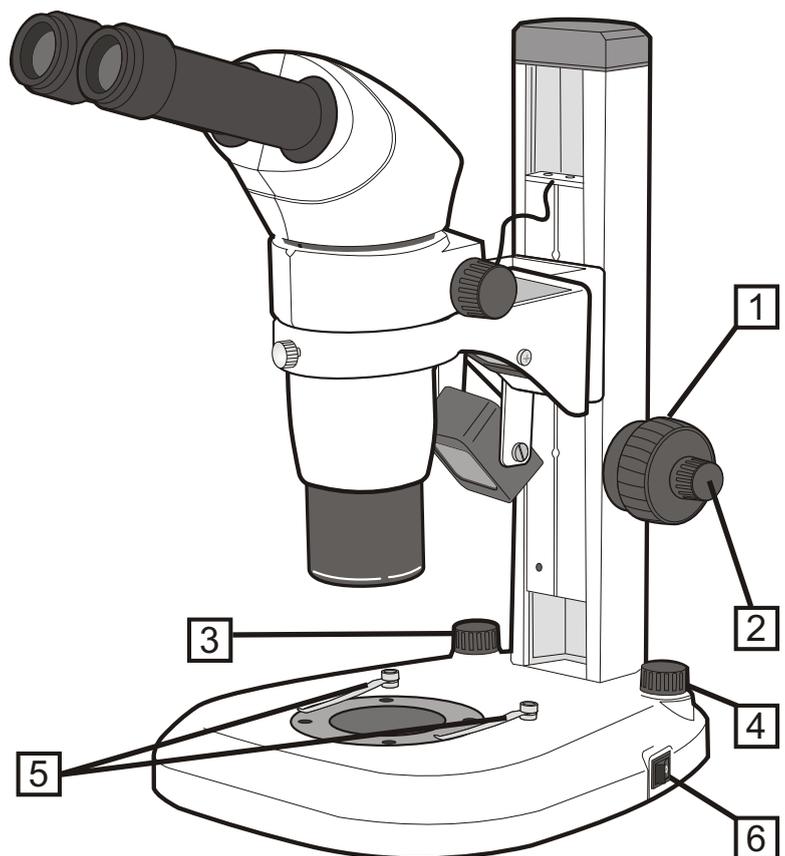
## Main system controls

- 1 Interpupillary adjustment
- 2 Diopter adjustment
- 3 Zoom controls (one each side)



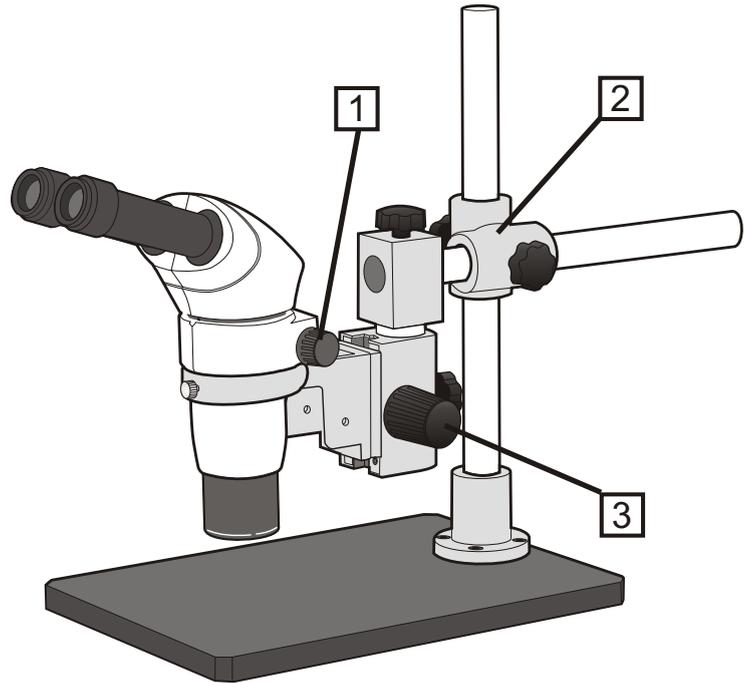
## Bench stand controls

- 1 Focus controls
- 2 Fine focus control
- 3 Reflected illumination control
- 4 Transmitted illumination control
- 5 Specimen clamps
- 6 On/Off switch



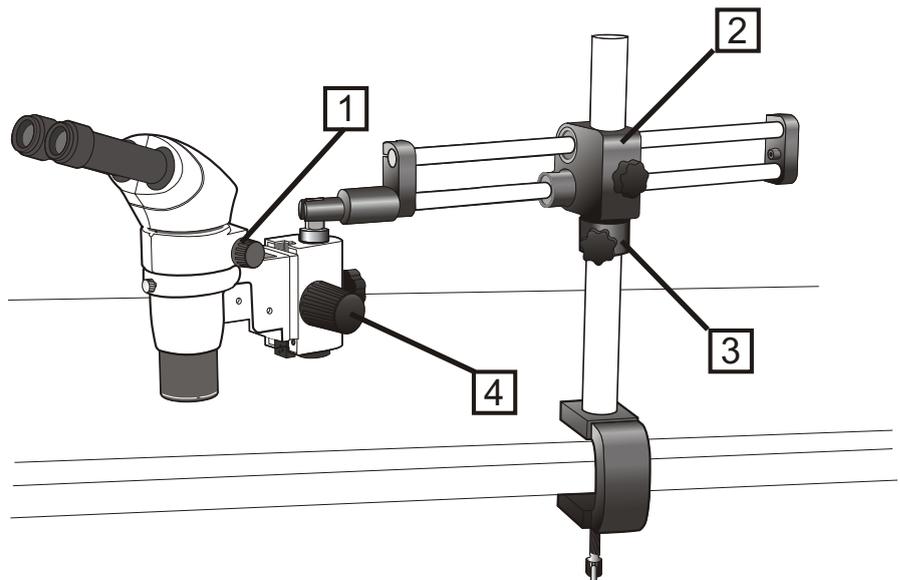
## Boom stand controls

- 1 Zoom
- 2 Height/reach adjustment
- 3 Focus



## Dual-arm boom stand controls

- 1 Zoom
- 2 Height adjustment
- 3 Height lock
- 4 Focus









## **WARRANTY**

This product is warranted to be free from defects in material and workmanship for a period of one year from the date of invoice to the original purchaser.

If during the warranty period the product is found to be defective, it will be repaired or replaced at facilities of Vision Engineering or elsewhere, all at the option of Vision Engineering. However, Vision Engineering reserves the right to refund the purchase price if it is unable to provide replacement, and repair is not commercially practicable or cannot be timely made. Parts not of Vision Engineering manufacture carry only the warranty of their manufacturer. Expendable components such as fuses carry no warranty.

This warranty does not cover damage in transit, damage caused by misuse, neglect, or carelessness, or damage resulting from either improper servicing or modification by other than Vision Engineering approved service personnel. Further, this warranty does not cover any routine maintenance work on the product described in the user guide or any minor maintenance work which is reasonably expected to be performed by the purchaser.

No responsibility is assumed for unsatisfactory operating performance due to environmental conditions such as humidity, dust, corrosive chemicals, deposition of oil or other foreign matter, spillage, or other conditions beyond the control of Vision Engineering.

Except as stated herein, Vision Engineering makes no other warranties, express or implied by law, whether for resale, fitness for a particular purpose or otherwise. Further, Vision Engineering shall not under any circumstances be liable for incidental, consequential or other damages.

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## For more information...

Vision Engineering has a network of offices and technical distributors around the world. For more information, please contact your Vision Engineering branch, local authorised distributor, or visit our website.

Vision Engineering Ltd.  
**(Manufacturing)**  
Send Road, Send, Woking,  
Surrey, GU23 7ER, England  
Tel: +44 (0) 1483 248300  
Fax: +44 (0) 1483 223297  
Email: [generalinfo@visioneng.com](mailto:generalinfo@visioneng.com)

Vision Engineering Inc.  
**(Manufacturing & Commercial)**  
570 Danbury Road, New Milford,  
CT 06776 USA  
Tel: +1 (860) 355 3776  
Fax: +1 (860) 355 0712  
Email: [info@visioneng.com](mailto:info@visioneng.com)

Vision Engineering Ltd.  
**(Central Europe)**  
Anton-Pendele-Str. 3,  
82275 Emmering, Germany  
Tel: +49 (0) 8141 40167-0  
Fax: +49 (0) 8141 40167-55  
Email: [info@visioneng.de](mailto:info@visioneng.de)

Vision Engineering Ltd.  
**(France)**  
ZAC de la Tremblaie, Av. de la Tremblaie  
91220 Le Plessis Paté, France  
Tel: +33 (0) 160 76 60 00  
Fax: +33 (0) 160 76 60 01  
Email: [info@visioneng.fr](mailto:info@visioneng.fr)

Vision Engineering Ltd.  
**(Commercial)**  
Monument House, Monument Way West,  
Woking, Surrey, GU21 5EN, England  
Tel: +44 (0) 1483 248300  
Fax: +44 (0) 1483 248301  
Email: [generalinfo@visioneng.com](mailto:generalinfo@visioneng.com)

Vision Engineering Inc.  
**(Commercial West Coast USA)**  
745 West Taft Avenue, Orange,  
CA 92865 USA  
Tel: +1 (714) 974 6966  
Fax: +1 (714) 974 7266  
Email: [info@visioneng.com](mailto:info@visioneng.com)

Nippon Vision Engineering  
**(Japan)**  
272-2 Saedo-cho, Tsuduki-ku,  
Yokohama-shi, 224-0054, Japan  
Tel: +81 (0) 45 935 1117  
Fax: +81 (0) 45 935 1177  
Email: [info@visioneng.jp](mailto:info@visioneng.jp)

Vision Engineering Ltd Italia  
**(Italy)**  
Via Cesare Cantù, 9  
20092 Cinisello Balsamo MI, Italy  
Tel: +39 02 6129 3518  
Fax: +39 02 6129 3526  
Email: [info@visioneng.it](mailto:info@visioneng.it)

Distributor

Vision Engineering Ltd  
**(China)**  
11J, International Ocean Building,  
720 Pudong Avenue, Shanghai,  
200120, P.R. China  
Tel: +86 (0) 21 5036 7556  
Fax: +86 (0) 21 5036 7559  
Email: [info@visioneng.com.cn](mailto:info@visioneng.com.cn)

Vision Engineering  
**(SE Asia)**  
Email: [info@visioneng.asia](mailto:info@visioneng.asia)

Visit our multi-lingual website:

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