

Mantis

User Guide

Episcopic illuminator
for the Mantis Elite

LED Episcopic illuminator for the Mantis stereo microscope

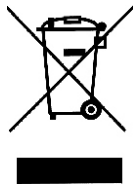
Vision Engineering manufacture a wide range of patented optical systems, offering fatigue-free viewing with superb hand/eye co-ordination, for improved quality and productivity.

The LED Episcopic illuminator (EPI), which may also be used with substage illumination, provides coaxial surface illumination and is used for illuminating surface features, blind holes, etc.

The LED EPI illuminator is an accessory for the Mantis stereo microscope. The Mantis utilises Vision Engineering's patented technology, offering the user advanced ergonomics by removing the need for restrictive eyepieces.

Mantis is used in a wide range of industry applications including general manufacturing, medical devices, electronics, precision engineering, plastics and rubber. The multiple accessories available for the Mantis enable a wide variety of tasks including inspection, manipulation, assembly, dissection, soldering, polishing, finishing and measurement.

Health & Safety



Vision Engineering and its products conforms to the requirements of the EC Directives on Waste Electrical and Electronic Equipment (WEEE) and Restriction of Hazardous Substances (RoHS).

Compliance statement

This equipment conforms with the requirements of EN55022, EN61010 and EN61326 - 1997.

Electrical Supply

EPI input voltage: 5VDC 0.7A

Power Supply Voltage (via plug top power supply): 100-240VAC 50-60Hz 0.6A

Environmental Conditions

Operating temperature 0°C - +40°C

Storage Temperature -40°C - +65°C

Relative Humidity 5%-95% non-condensing

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ASSEMBLY

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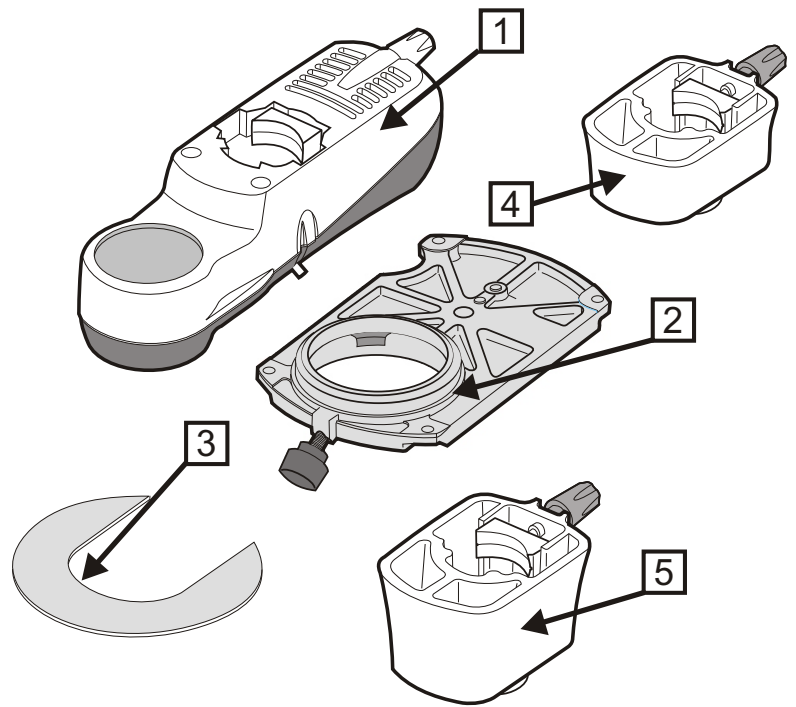
OPERATION

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WARRANTY

Episcopic illuminator

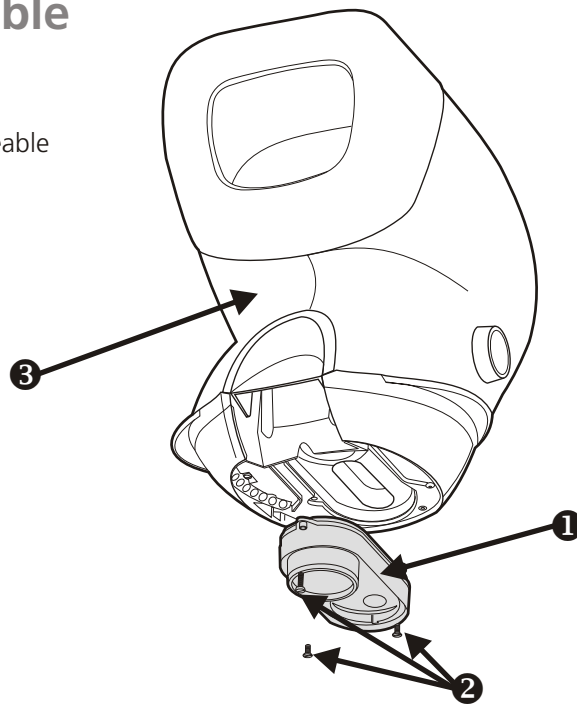
- 1 Episcopic illuminator
- 2 Interface plate
- 3 Fresnel (optional)
- 4 x6 spacer block (optional)
- 5 x8/x10 spacer block (optional)
- 6 Head power adaptor (not shown)
- 7 Dedicated power supply (not shown)



Note: *Although it is not necessary, it may be easier to remove the Mantis Head before carrying out the assembly instructions on the following pages (see the Mantis Bench Stand user guide).*

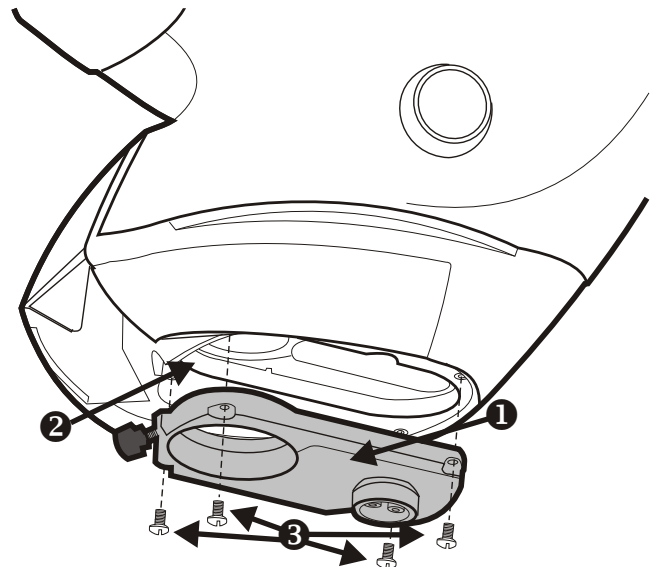
Removing the interchangeable turret

- ▶ Remove any objective lenses from the interchangeable turret **1**.
- ▶ Remove the 3 securing screws **2** and then remove the turret from the Mantis Elite head **3**.



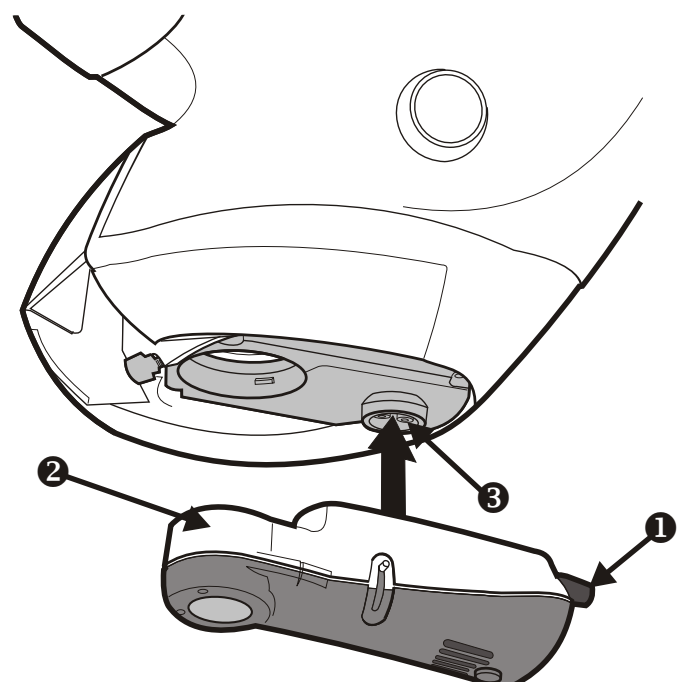
Fitting the interface plate

- ▶ Locate the interface plate **1** into the recess **2**.
- ▶ Secure the plate with the 4 securing screws **3** provided.



Fitting the episcopic illuminator

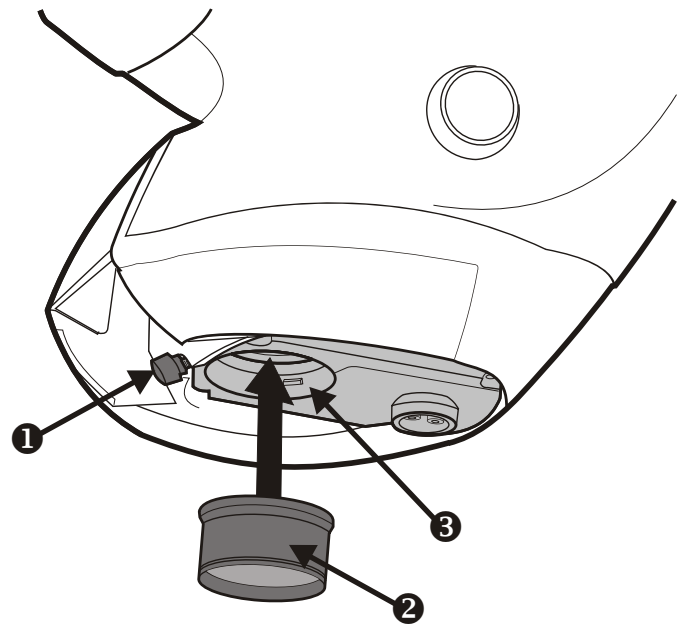
- ▶ Fully loosen the EPI thumbscrew **1** and locate the illuminator **2** over the balljoint feature **3**.
- ▶ Ensuring the EPI thumbscrew is towards the rear of the head as shown, tighten the thumbscrew.



Fitting an objective lens

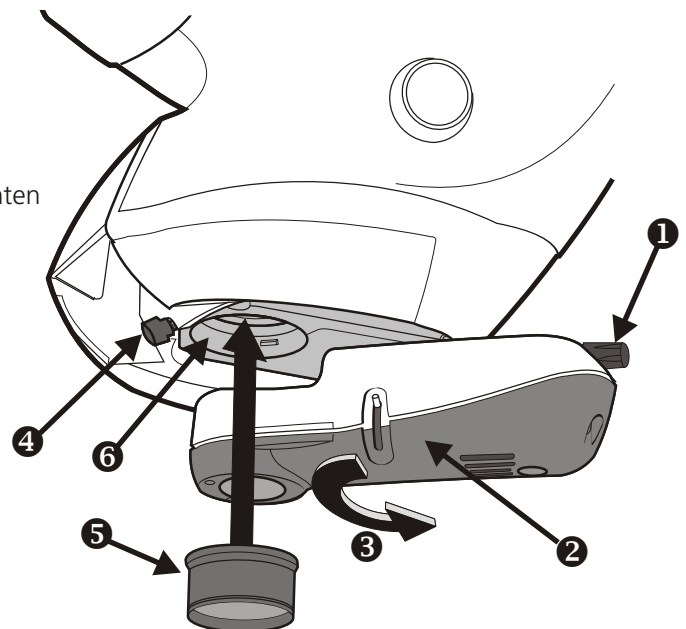
Prior to fitting the EPI illuminator

- ▶ Loosen the lens securing screw **1**.
- ▶ Locate the lens **2** into the interface plate **3** and tighten the securing screw.



With the EPI illuminator fitted

- ▶ Slacken the EPI thumbscrew **1** and rotate the illuminator **2** in the direction of arrow **3**.
- ▶ Loosen the lens securing screw **4**.
- ▶ Locate the lens **5** into the interface plate **6** and tighten the securing screw.
- ▶ Rotate the EPI illuminator over the lens and tighten its thumbscrew to lock it into position.

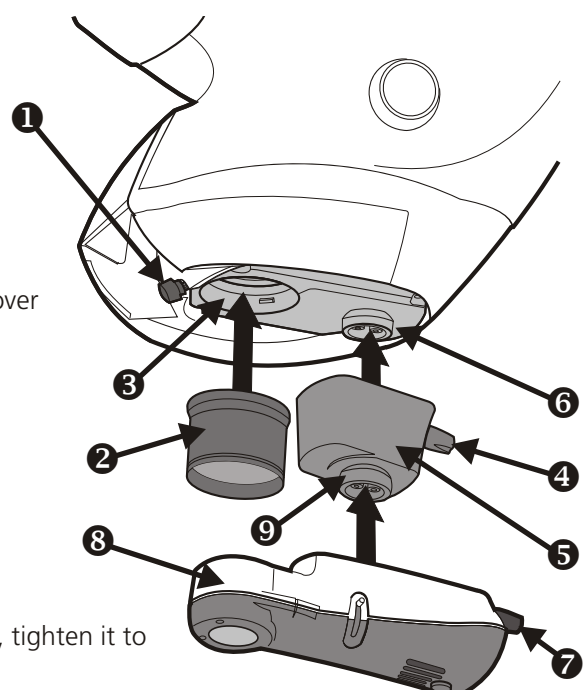


Using a spacer block

Some objective lenses (see table below) require a spacer block to be fitted between the interface plate and the EPI illuminator as follows:

Objective	Required spacer block
x4	No spacer block
x6	x6 (small) spacer block
x8	x8/10 (large) spacer block
x10	x8/10 (large) spacer block

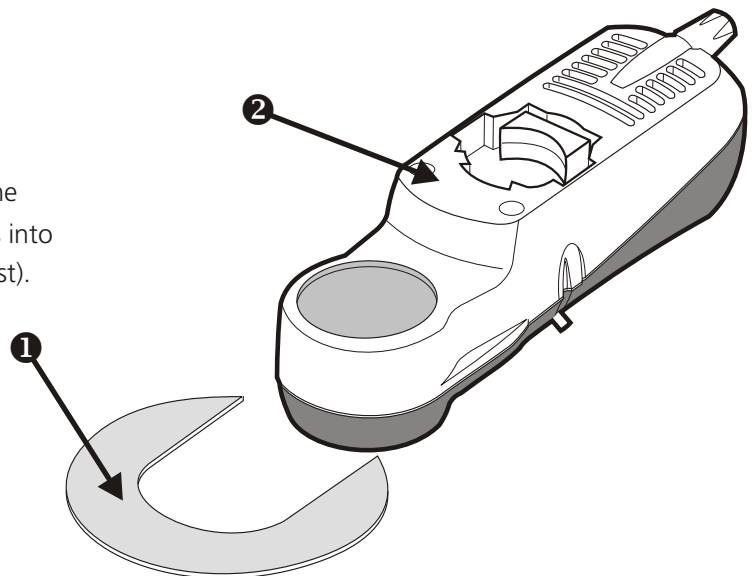
- ▶ Loosen the lens securing screw **1**, locate the lens **2** into the interface plate **3** and tighten the securing screw.
- ▶ Loosen the spacer thumbscrew **4** and locate the spacer **5** over the balljoint feature **6**.
- ▶ Ensuring the spacer thumbscrew is towards the rear of the head, tighten it.
- ▶ Loosen the EPI thumbscrew **7** and locate the illuminator **8** over the balljoint feature **9**.
- ▶ Ensuring the EPI thumbscrew is towards the rear of the head, tighten it to lock it into position.



Fitting the Fresnel lens

Note: For use with x6 objective lens only.

- ▶ Slide the Fresnel lens ① in the groove around the front of the EPI illuminator ② until the lens clips into place (ensuring the textured surface is uppermost).



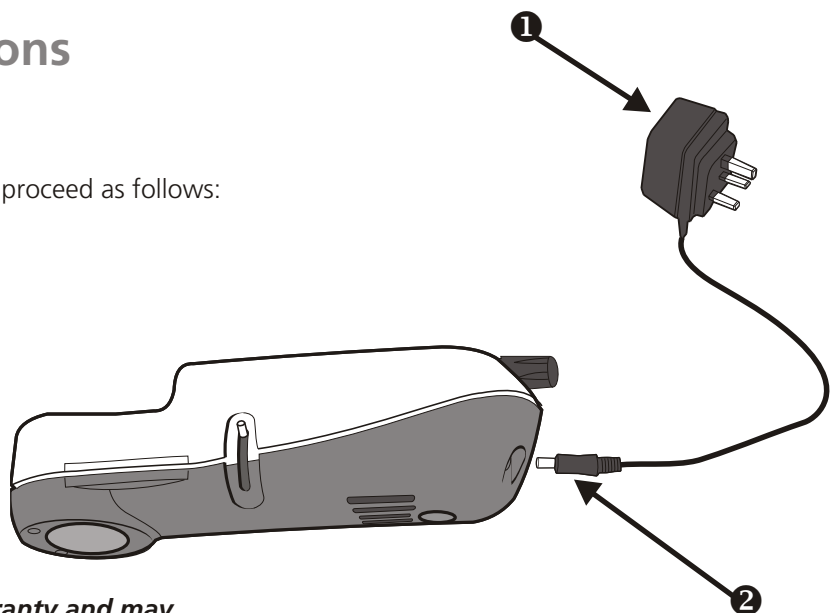
Power connection options

Dedicated power supply

To use the dedicated power supply provided, proceed as follows:

- ▶ Plug the power supply ① into a suitable mains outlet and the power supply's output ② into the rear of the EPI illuminator.

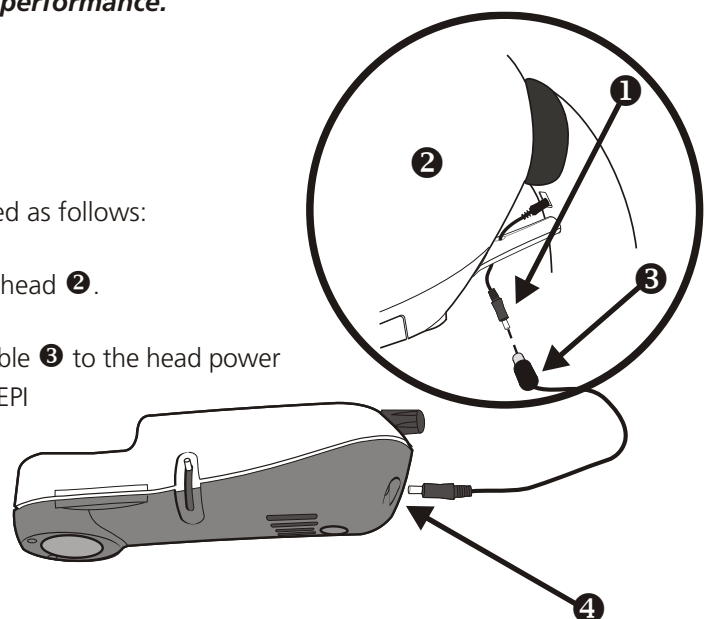
Warning: To avoid damaging the unit, **DO NOT** use any other power supply than the one provided. The use of any other power supply will invalidate the warranty and may compromise safe operation and EMC performance.



Head power adaptor

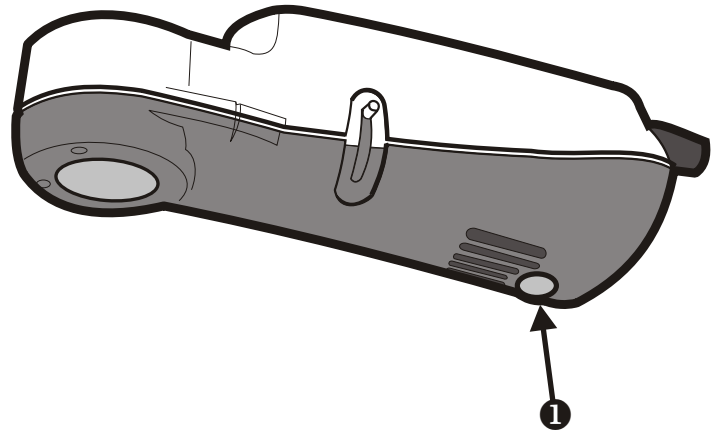
To use the head power for the EPI illuminator, proceed as follows:

- ▶ Remove the head power connector ① from the head ②.
- ▶ Connect the appropriate end of the EPI power cable ③ to the head power connector and the other end into the rear of the EPI illuminator ④.



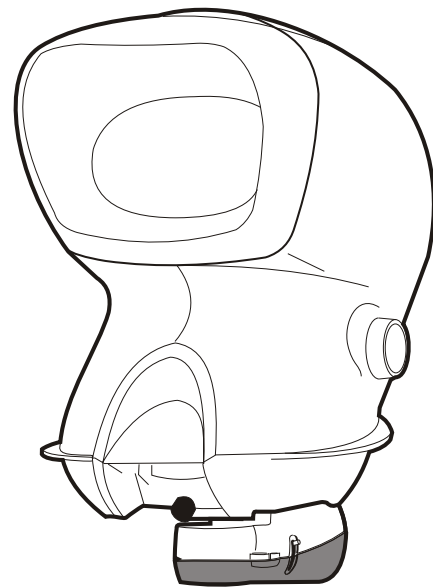
Turning the EPI illuminator on or off

- ▶ The power button ❶ for the EPI can be found on the underside of the unit.
- ▶ Press it once to turn the unit on and again to turn it off.



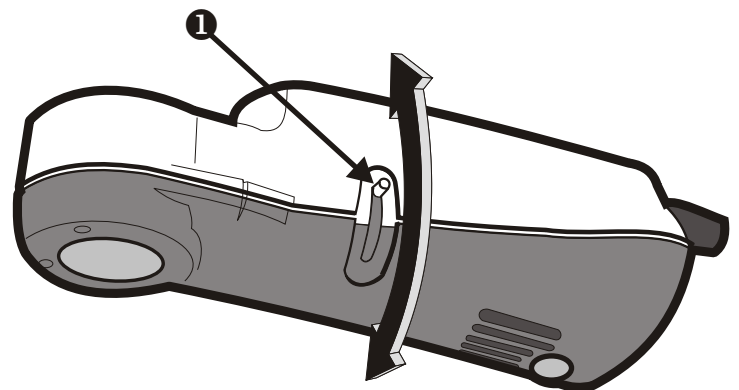
EPI light pool centring

- ▶ When the EPI is set up with the desired objective, fit the Elite head back on to its stand (if necessary).
- ▶ Slacken the EPI thumbscrew and rotate the EPI until it is roughly aligned underneath the objective.
- ▶ Turn on the EPI and focus the Elite on a subject in the normal way as per the Elite instructions.
- ▶ Shut down the light pool of the EPI to its smallest size (see **Iris control** below).
- ▶ Looking into Elite viewing aperture, rotate the EPI to position the light pool in the centre of the image, using the balljoint feature. Tighten the EPI thumbscrew to lock the EPI in place.



Iris control

- ▶ Use the iris control ❶ on the side of the illuminator body to vary the size of the episcopic light column.



NOTES

NOTES



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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