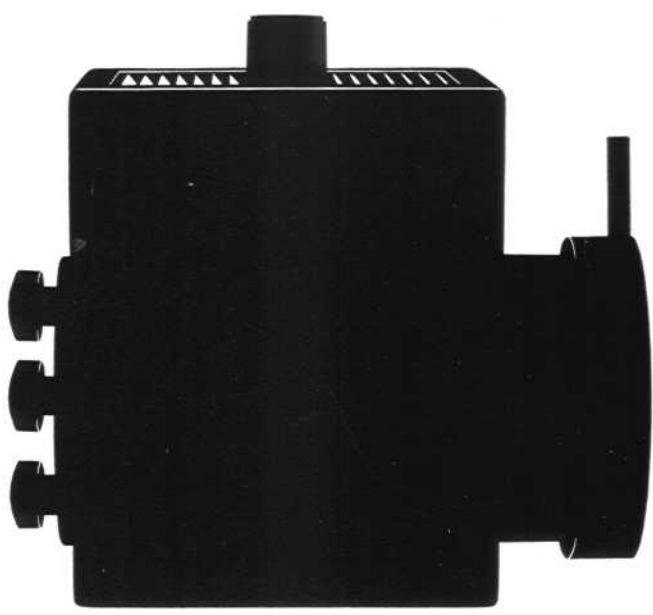


Lamp Housing 100 and 100Z



Instructions





Instructions

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1 Introduction

The Lamp Housing 100 is designed for the use of light sources of up to 100W.

It is available in two variants:

Lamp Housing 100 with simple centring facility

Lamp Housing 100 Z with complete centring device for the reflector and lamp.

A pre-centred 12v 60W or 12v 100W low-voltage filament lamp is used in the Lamp Housing 100 (horizontal and vertical centration).

The Lamp Housing 100 Z is suitable for the use of gas discharge lamps and therefore has a reflector with centring device for the production of a secondary image of the filament.

The following light sources can be used:

for Lamp Housing 100

12v 100W tungsten halogen lamp

12v 60W/100W filament lamp

OSRAM spectrum lamps

100W deuterium lamps

for Lamp Housing 100 Z

12v 100W tungsten halogen lamp

50W ultra-high-pressure mercury lamp

100W ultra-high-pressure mercury lamp

45W high-pressure mercury lamp (St 48)

75W high-pressure xenon lamp

The condenser of the Lamp Housing 100 and 100 Z is interchangeable.

2 Technical description

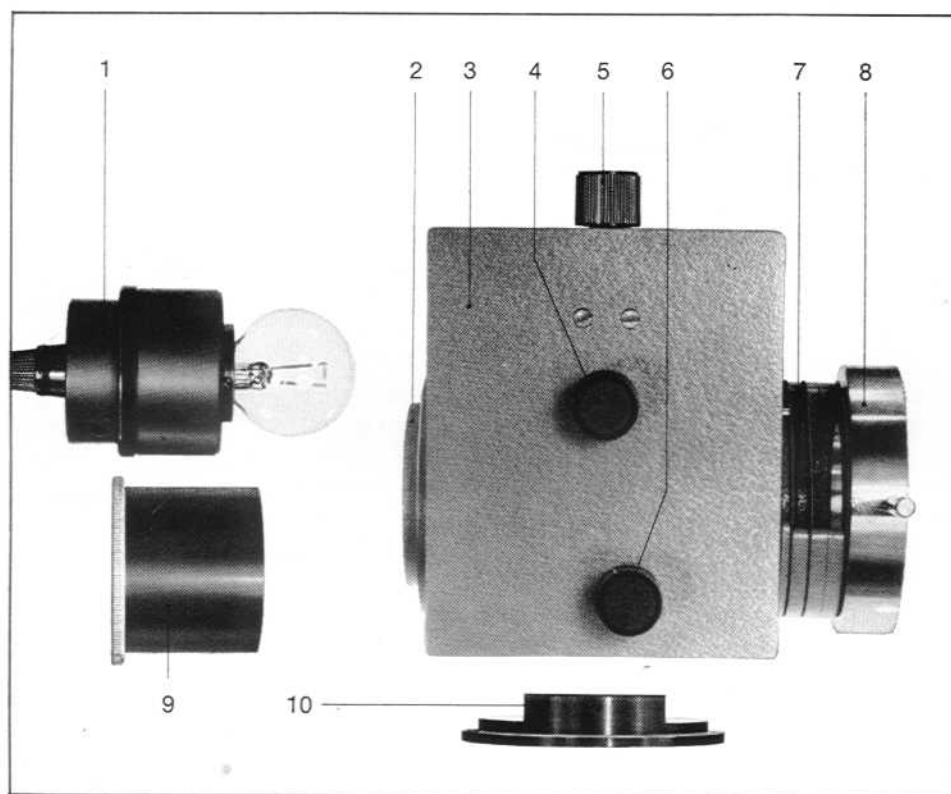


Fig. 1 Lamp Housing 100

- 1 Mount for 12v 60W/12v 100W filament lamp
- 2 Attachment for lamp mount and reflector
- 3 Air-cooled lamp housing with louvres
- 4 Focusing knob for lamp condenser
- 5 Knob for the vertical adjustment of the lamp
- 6 Knob for the horizontal adjustment of the lamp
- 7 Slot for 3 filters
- 8 Attachment ring and bayonet lock
- 9 Reflector for the use of the 12v 100W tungsten halogen lamp
- 10 Baseplate

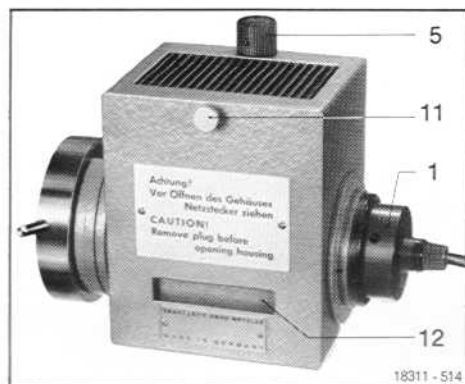


Fig. 2 Lamp Housing 100

- 1 Mount for 12v 60W filament lamp
- 5 Knob for the vertical adjustment of the lamp
- 11 Screw for opening and closing the lamp housing
- 12 Cooling aperture with heat deflection plate



Fig. 3 Lamp Housing 100 Z

- 5 Knob for the vertical adjustment of the lamp
- 11 Screw for opening and closing the lamp housing
- 13 Knob for the vertical adjustment of the mirror
- 14 Focusing knob for the mirror
- 15 Knob for the lateral adjustment of the mirror

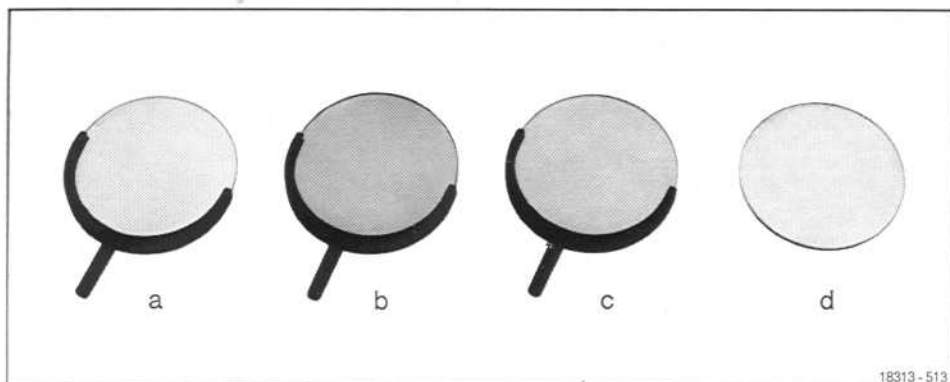


Fig. 4 Filter set F

- a N diffusion disc
- b CB 12 conversion filter
- c Green filter
- d Heat filter

3 Lamp Housing 100

3 Inserting the pre-centred 12v 60W or 12v 100W low-voltage filament lamp

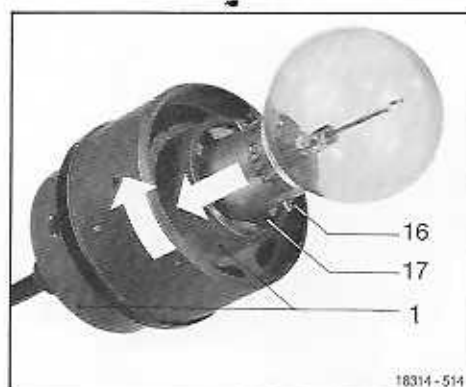


Fig. 5
Inserting the 12v 60W or 100W filament lamp in the lamp mount

- 1 Lamp mount
- 16 Locating strip
- 17 Recess in the lamp mount for the locating strip

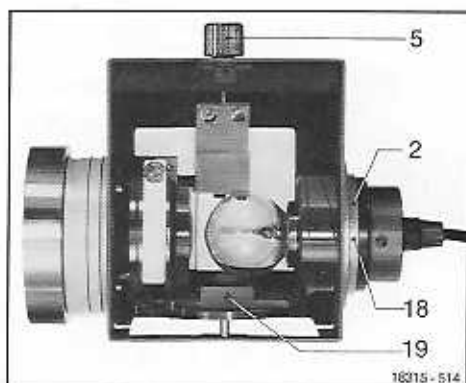


Fig. 5
Lamp Housing 100, with 12v 60W filament lamp

- 2 Attachment fitting for lamp mount or reflector
- 5 Knob for the vertical adjustment of the lamp
- 18 Grub screw for arresting the reflector
- 19 Grub screw for arresting the baseplate for the 12v 100W tungsten halogen lamp.



Fig. 7
Regulating transformer for the 12v 60W/100W lamp.

For shipment, lamp mount 1.1* and baseplate 1.10 are accommodated in the lamp housing. Release mount 1.1 and remove it from the lamp housing. Insert the filament lamp with the wide locating strip 5.16 in the aperture 5.17, slightly press it downwards, and lock it by a clockwise turn. Push the pre-centred lamp mount with lamp into the attachment fitting 6.2 in the back of the lamp housing as far as possible, and connect it to the transformer. Optimum illumination is obtained by rotation of the focusing knob 1.4 for the lamp condenser and simultaneous observation through the eyepiece tube, until the rear focal plane of the objective is evenly illuminated.

* 1.1 means Fig. 1 item 1

312 Adjusting the sliding sleeve for the 60W and 100W filament lamp

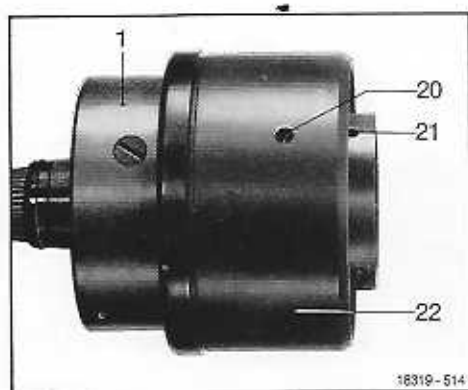


Fig. 8
Position of the sliding sleeve 22 when the 60W lamp is used

- 1 Lamp mount
- 20 Grub screw for arresting the sliding sleeve
- 21 Recess for grub screw 20
- 22 Sliding sleeve

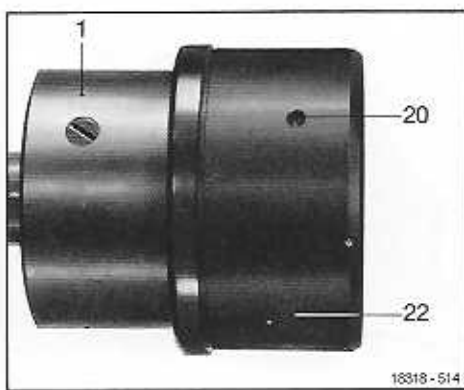


Fig. 9
Position of the sliding sleeve 22 when the 100W lamp is used

- 1 Lamp mount
- 20 Grub screw for arresting the sliding sleeve
- 22 Sliding sleeve

Release grub screw 8.20 by three anti-clockwise turns. Push the sliding sleeve 8.22 up to the front recess 8.21 of the guide groove. Tighten the screw. The filament of the lamp is now correctly adjusted for the 100W lamp (Fig. 9).

32 Inserting the 12v 100W tungsten halogen lamp in the Lamp Housing 100

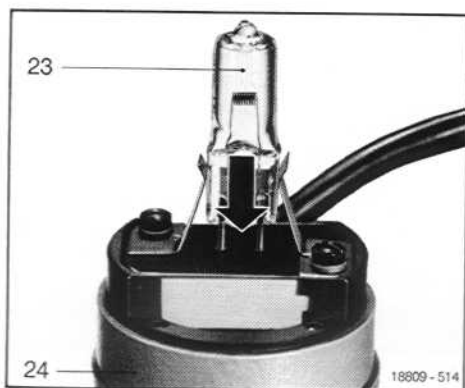


Fig. 10
Inserting the 12v 100W tungsten halogen lamp
23 Tungsten halogen lamp
24 Lamp mount

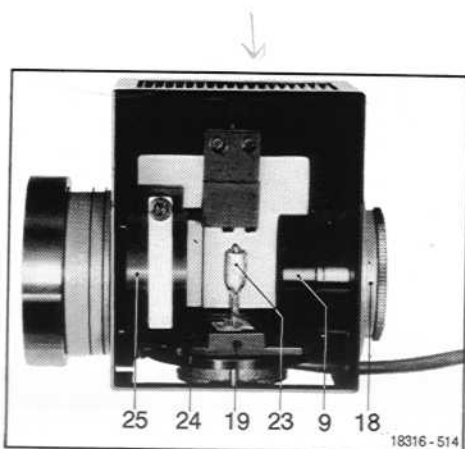


Fig. 11
Lamp housing, open, with 12v 100W tungsten halogen lamp
9 Reflector
18 Grub screw for arresting the reflector
19 Grub screw for arresting the lamp mount
23 12v 100W tungsten halogen lamp
24 Lamp mount
25 Condenser

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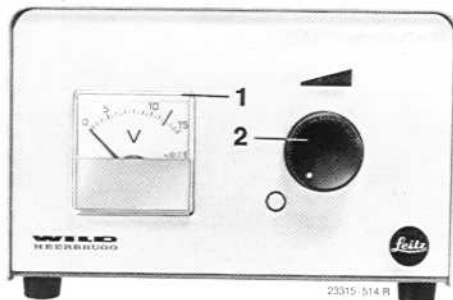


Fig. 12
Supply unit for 12v 100W tungsten halogen lamp

During shipment lamp mount 11.24 and reflector 11.9 are accommodated in the lamp housing.

Remove the lateral lid. Move condenser 11.25 into the front-most position. Remove the lamp mount. Insert the lamp with protective cover in the socket of the mount. Remove the protective cover only after insertion. Insert and secure the lamp mount with lamp, close the lamp housing. Connect it to transformer.



33 Adjusting the 12v 100W tungsten halogen lamp in the Lamp Housing 100

Remove the filters and diffusion disc from the filter slot 1.7. Completely open the field diaphragm. Place the adjustment disc on the dustglass of the microscope.

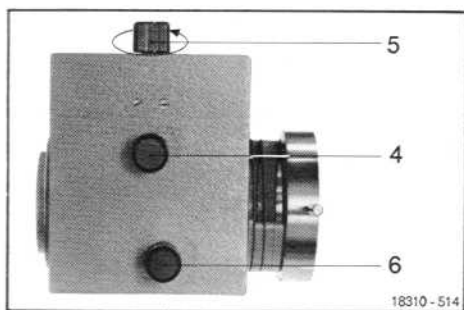
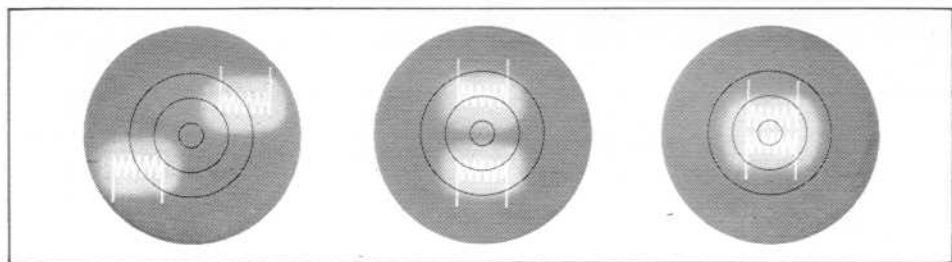


Fig. 13
Rotate knob 5 for the vertical adjustment as far as it will go in the direction of the arrow.



Focus the reflected image of the lamp filament by moving the reflector 1.9 and secure it with the grub screw 11.18. Form an image of the lamp filament and its mirror image on the adjustment disc by rotating knob 13.4.

Move the image of the lamp filament and its mirror image into the centre by rotating knob 13.6.

Rotate knob 13.5 for the vertical adjustment of the lamp until the image of the filament and the mirror image marginally overlap.

After insertion of the diffusing disc and removal of the adjustment disc rotate the focusing knob 13.4 for the lamp condenser, simultaneously observing through the eyepiece tube, until the rear focal plane of the objective is evenly illuminated.

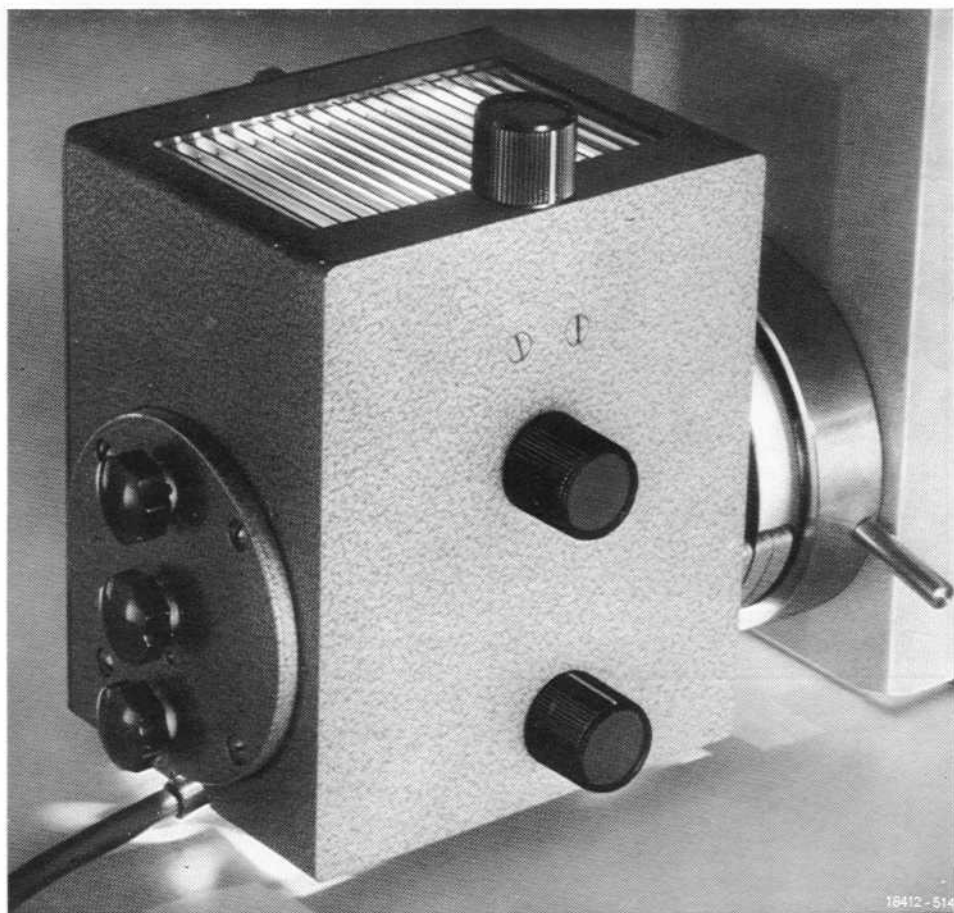
34 Replacing the tungsten filament lamp by the low-voltage lamp

For the replacement of the tungsten halogen lamp by the 12v 60W filament lamp open the lamp housing, release the grub screw 11.19 and pull out the mount with tungsten halogen lamp downwards. Insert baseplate 1.10 and

secure it with the grub screw 11.19. Close the lamp housing.

Release the grub screw 11.18, pull out reflector 11.9 towards the rear and insert the lamp mount with low-voltage lamp as far as it will go. Connect it to the transformer.

Fig. 14 Lamp Housing 100 Z on the ORTHOPLAN®



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4 Lamp Housing 100 Z

41 Inserting the 50W ultra-high-pressure mercury lamp



Fig. 15
Mount for 50W ultra-high-pressure mercury lamp.

Fig. 16
Inserting the 50W ultra-high-pressure mercury lamp

Fig. 17

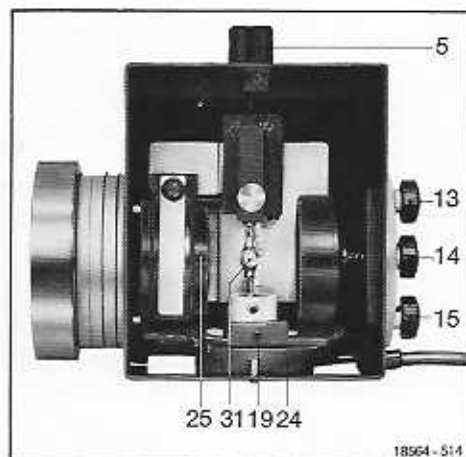


Fig. 18
Lamp Housing 100 Z open

For shipment, the lamp mount 18.24 is inserted in the Lamp Housing 100 Z. Open lamp housing, release grub screw 18.19 and pull the mount out downwards. Insert the lamp between clamping jaws 15.26 of the flexible current lead 15.28 and clamp it with the knurled screw 15.27. Release grub screw 15.29 in the mount and insert the remaining free mount of the lamp bearing lettering. Tighten grub screw 16.29.

Move the condenser 18.25 into the front-most position (in the direction of the attachment fitting). Insert lamp mount 18.24 with lamp 18.31 into the lamp housing from below as far as it will go. The recess 15.30 in the lamp mount must face the grub screw 18.19, which must now be tightened.

Close the lamp housing and connect it to the power unit.

42 Centring the 50W ultra-high-pressure mercury lamp

Remove the filters from the slot 1.7. Completely open the field diaphragm in

the microscope. Insert grey filter in the beam to reduce the light intensity. Place the adjustment disc on the dust-glass of the microscope.

Image of the lamp

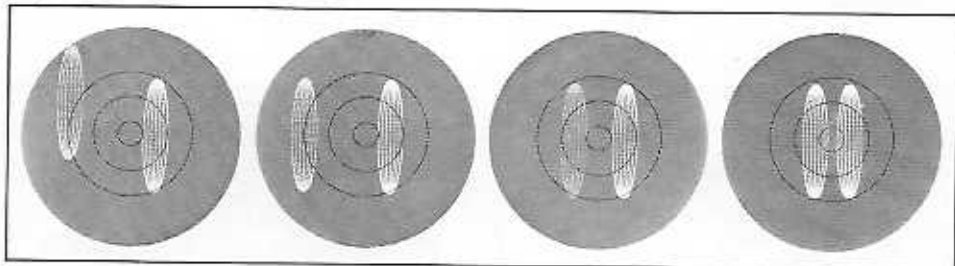


Adjust the knurled knob 1.4 for the condenser until a sharp image of the discharge arc is formed on the adjustment disc.

Rotate knob 18.5 for the vertical adjustment until the image of the discharge arc is moved to the correct level according to the illustration.

Rotate knob 1.6 for the horizontal adjustment until the image of the arc appears between the two inner circles of the adjustment disc.

Image of the lamp and its mirror image



Adjust focusing knob 18.14 for the adjustment of the concave mirror in the direction of the optical axis until a sharp mirror image is formed of the discharge arc.

Rotate knob 18.13 for the vertical adjustment until the mirror image is at the same level as the image of the discharge arc.

Actuate the knob 18.15 for the lateral adjustment, until both images (discharge arc and mirror image) are side by side.

After the discharge arc image and the mirror image have been positioned side by side remove the adjustment discs from the dustglass of the microscope.

The condenser 1.4 must now be adjusted, with simultaneous observation through the eyepiece tube, until the rear focal plane of the objective is

evenly illuminated. Remove the grey filter from the beam and turn the diffusing disc in.

4.3 Inserting the 100W ultra-high-pressure mercury lamp

Wear protective goggles and gloves
(danger of explosion).*



Fig. 19 Mount of the 100W mercury lamp



Fig. 20 Inserting the lamp



Fig. 21 Lamp inserted in the mount
Firmly tighten the screw after insertion of the lamp

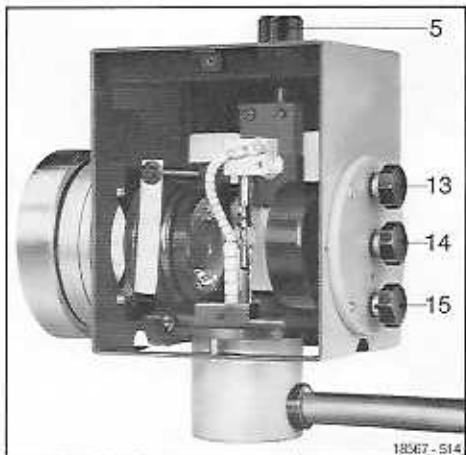


Fig. 22 Lamp Housing 100 Z open
with 100W mercury lamp

- 5 Knob for the vertical adjustment of the lamp
- 13 Knob for the vertical adjustment of the concave mirror
- 14 Focusing knob for the mirror
- 15 Knob for the lateral adjustment of the mirror

**44 Inserting the 75W
high-pressure xenon lamp**
Wear protective goggles and gloves
(danger of explosion)

The plastic protective body must not yet be removed. Even when cold, the high-pressure xenon lamp is under pressure.

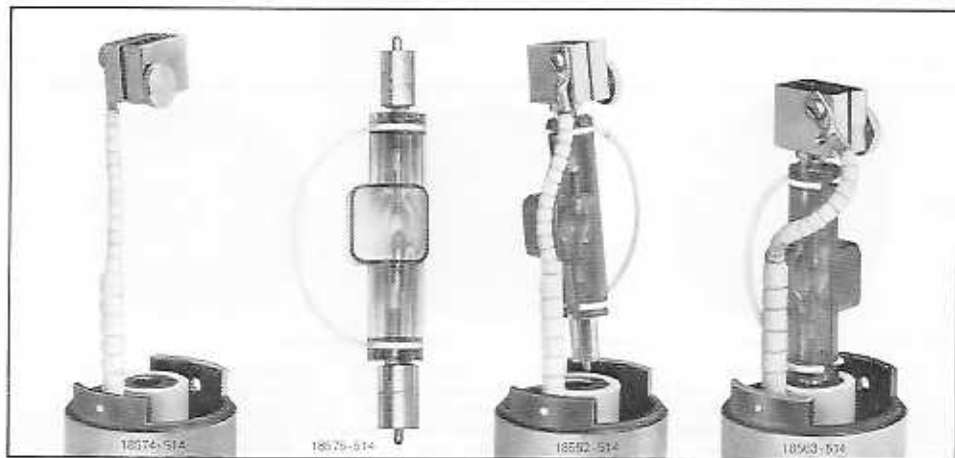


Fig. 23
Mount of the
75W xenon lamp

Fig. 24
High-pressure
xenon lamp in the
protective body

Fig. 25
Inserting the lamp
(mount with lettering
downwards)

Fig. 26
Lamp inserted in the
mount (remove the
plastic protective
body)

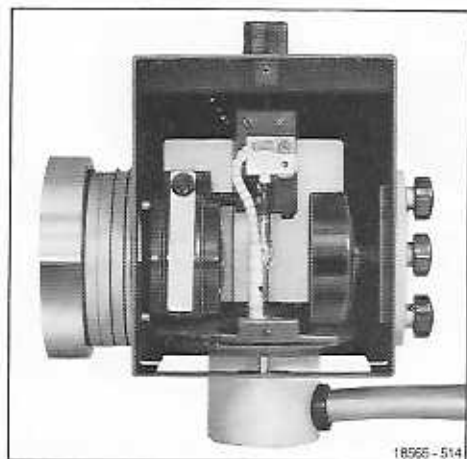


Fig. 27 Lamp Housing 100 Z open, with the 75W xenon lamp



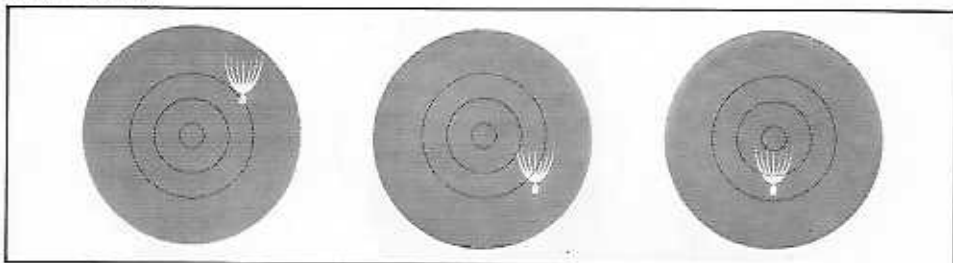
Fig. 28 Power unit for the 100W mercury lamp and the 75W xenon lamp

45 Centring the 75W high-pressure xenon lamp and the 100W ultra-high-pressure mercury lamp

Remove the filters from the filter slot. Completely open the field diaphragm in

the microscope. Insert grey filter in the beam to reduce the light intensity. Place the adjustment disc on the dustglass of the microscope.

Image of the lamp

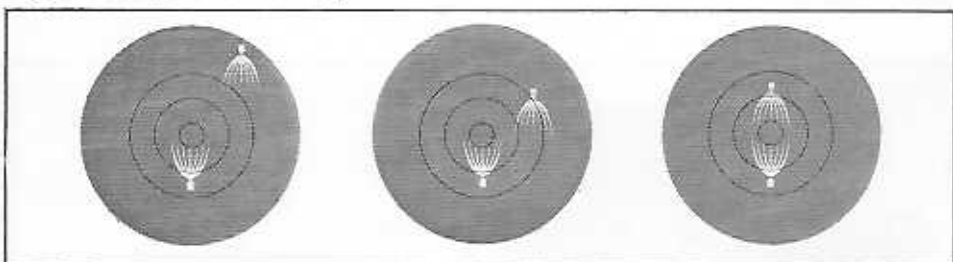


Adjust the condenser with the knurled knob 1.4 until a sharp image is formed of the cathode focal spot on the adjustment disc.

Rotate the knob 22.5 for the vertical adjustment until the image of the focal spot is below the middle circle of the adjustment disc.

Rotate knob 1.6 for horizontal adjustment until the focal spot is brought into the centre according to the illustration.

Image of the lamp and its mirror image



Adjust the focusing knob 22.14 for the adjustment of the concave mirror in the direction of the optical axis until a sharp image of the mirror image of the focal spot is formed.

Rotate knob 22.13 for the vertical adjustment until the mirror image is located above the middle circle of the adjustment disc.

Actuate the knob 22.15 for lateral adjustment until the mirror image faces the image of the focal spot according to the illustration.

Now adjust the condenser, with simultaneous observation through the eyepiece tube, until the rear focal plane of the objective is evenly illuminated. Remove the grey filter, and the adjustment disc from the dustglass.

46 Centring the 12v 100W tungsten halogen lamp in the Lamp Housing 100 Z

The tungsten halogen lamp is inserted as described under Lamp Housing 100.

Remove any filters and the diffusion disc from the filter slot; completely open the field diaphragm. Place the adjustment disc on the dustglass.

Lamp image

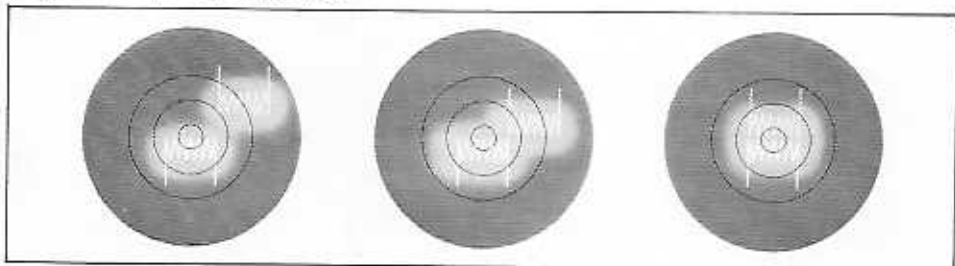


Form a sharp image of the lamp filament on the adjustment disc with the focusing knob 1.4 for the condenser.

Move the image of the lamp filament below the middle circle of the adjustment disc by means of the vertical adjustment knob 1.5.

Rotate knob 1.6 for the horizontal adjustment of the lamp until the image of the lamp filament is in the centre of the adjustment disc.

Image of the lamp and its mirror image



Form a sharp mirror image of the lamp filament with the focusing knob 22.14.

Move the mirror image laterally above the inner circle of the adjustment disc with knob 22.13.

Move the mirror image on top of the image of the lamp filament with knob 22.15. The image of the lamp filament and its mirror image must now be located in the centre of the adjustment disc.

Remove the adjustment disc from the dustglass. Insert the diffusion disc into the filter slot. Now adjust the condenser with knob 1.4, simultaneously observing the image through the eyepiece tube, until the rear focal plane of the objective is evenly illuminated.

Lamp Housing	Lamps	Use
LH 100	2v 60W/12v 100W 12v 100W halogen	Microscopy
	OSRAM spectrum lamps (available through the trade)	Incident-light interference
	100W deuterium lamp	Spectrophotometry
LH 100 Z	Xe 75W Hg 100W	Photometry
	St 48 high-pressure mercury lamp Spectrum lamps	Transmitted and incident light Interference
	12v 100W halogen	Photometry
	Hg 50W	Fluorescence