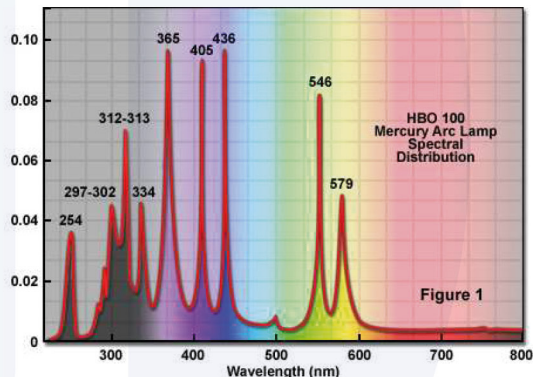


Alignment procedure 100W HBO lamp

INTRODUCTION - 100W HBO MERCURY VAPOR LIGHT SOURCES

Knowledge of the manual of the microscope is required for the operation of the instruments.

Would you therefore please make yourself familiar with the contents of the manual and pay special attention to hints concerning the safe operation of the instrument



- you wear a protective safety mask, spectacles and safety gloves
- the cables are still in good condition

Used HBO mercury vapor lamps must not be treated as domestic waste but be disposed in compliance with the local legal regulations. Clean dirty housing with in a mixture of water and cleaning fluid dipped cleaning tissue. Remove dirt and dry with clean cloth. Do not use solvents

SAFETY PRECAUTIONS

The HBO lamp may be removed from the package only if the protection mask and safety gloves with artery protection are worn

Be aware that HBO mercury vapor lamps are under high pressure. Therefore the lamp must always be operated in a closed lamp housing!

The HBO mercury vapor lamp produces strong UV radiation that can harm human eyes. Protective measures must be taken to avoid UV exposure to the eyes (protective orange window, UV protective sun glasses etc ...)

Never look directly into the lamp or in the reflected light!

The UV radiation of the lamps produces little quantities of harmful ozone. Take care to ventilate the room

Before replacing a HBO mercury vapor lamp, ensure that:

- the power is switched off for at least 10 minutes
- the lamp is cooled down enough before opening the lamp house in order to reduce the internal pressure and the contact temperature

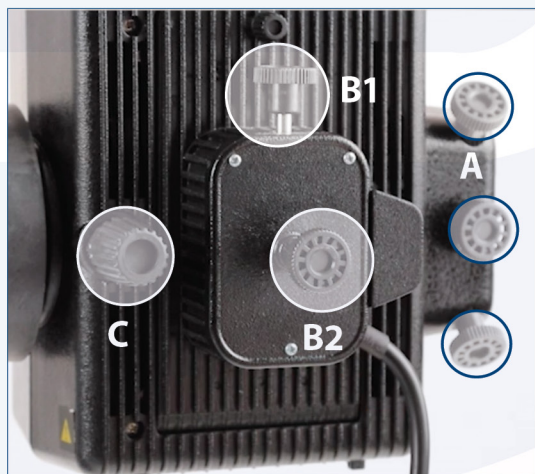
Replace the HBO 100W mercury vapor lamp after 200 hrs of operation because there is a risk of explosion of the lamp. If the lamp is operated properly, the risk of explosion is low and unlikely. In case, mercury (Hg) contained in the lamp is released, all persons should leave the room to avoid inhaling mercury vapor. Ventilate the room for 30 minutes. Once the lamp has cooled down, collect any mercury residues left inside the lamp housing or conceal the lamp house and replace the lamp housing

Besides the light intensity decreases drastically after 200 hrs and homogeneous illumination cannot be guaranteed. The operating time can be checked on the display of the power supply. Defective parts of the instrument may only be repaired and maintained by authorized personnel. The user should not perform any repairs or changes by himself

DESCRIPTION OF UNIT

The fluorescence 100 W HBO light source consist of a lamphouse with the 100 W HBO lamp and the power supply. Depending on the model, the lamphouse can have up to 6 adjustments.

- A. 3 screws at the back of the lamp house, control the position of the reflected beam
- B. 2 screws at the side of the lamp house, control the position of the direct beam
- C. 1 screw controls the focusing



The 100W HBO mercury vapor lamp can be replaced by opening the side door on the HBO lamphouse

Don't touch the glass of the HBO lamp with the fingers

Use a soft tissu to remove or insert the HBO lamp

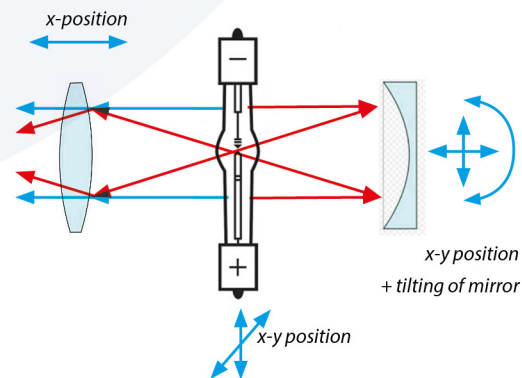
ALIGNMENT PROCEDURE

After having replaced an HBO mercury vapor lamp, following alignment procedure must be performed

1. Turn on the lamp and wait 15 minutes for warming up. Select the fluorescence filters cube for green (or blue) excitation
2. Remove an objective from the nosepiece



3. Position a white paper with a cross in the middle on the stage of the microscope. You should see the excitation light illuminating the paper
4. Position the cross in the center of the spot
5. Lamp housings can be supplied with 3 or with 6 adjustments knobs:
 - 2 knobs are for lamp to x-y alignment of the HBO lamp (B1 and B2 in image on the left)
 - 3 knobs are for positioning of the mirror in the back of the lamp housing (A in image on the left)
 - 1 knob is for focusing the direct and reflected beams (C in image on the left)

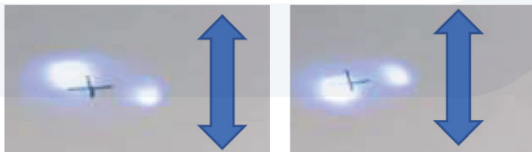


- When one adjusts the direct beam position, both light beams (direct and reflected) are moving in opposite directions
- When one adjusts the reflected beam position, only the reflected beam will move 5, 2015
- Use the focusing adjustment knob (C) on the lamp house to focus the light

Normally you should see two beams: direct and reflected beams



- To move the direct beam with the horizontal and vertical adjustment knobs on the side of the lamp house **(B1 and B2)**

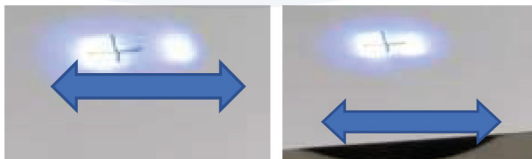


Vertical movement

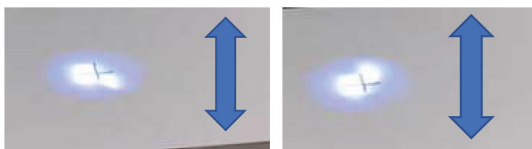


Horizontal movement

- To move the reflected beam horizontally and vertically, use the adjustment knobs at the back of the microscope **(A, if available)**



Horizontal movement

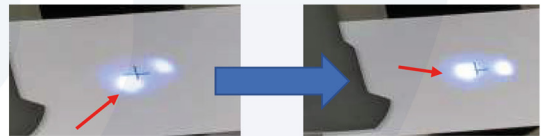


Vertical movement

- To focus the reflected beam, use the middle knob at the back of the lamp house **(A, middle knob)**



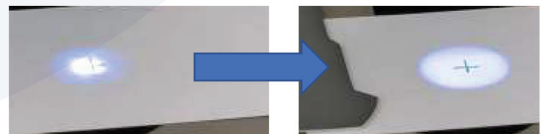
- Use the knobs at the side of the lamp house to move the direct beam slightly off the center of the cross **(B1 ad B2)**



- Align now both - the direct and reflected - beams so that they are in a symmetrical position, just besides each other but not completely overlapping in the middle



- Then defocus with the focusing adjustment knob **(C)**



- Position an objective to check the focused beam. To focus the reflected beam, use the middle knob at the back of the lamp house **(A, middle knob)**

