Document Number:	**SASoM/EQUIP/102.v1**
Title:	**Changing a HBO-50 Mercury Bulb in the Zeiss Axiovert 40 CFL Microscope**
Version:	**v1**
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Effective from:	16/02/2017
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SOP History		
Number	Date	Reason for Change
v1	01/02/2017	Original

1.0 Purpose –

The purpose of this SOP is to outline the practice of changing an 'HBO-50' Mercury Bulb in the Zeiss Axiovert 40 CFL Microscope in Laboratory 248 at the St Andrews School of Medicine (SASoM).

2.0 Scope –

This SOP applies to changing an 'HBO-50' Mercury Bulb in the Zeiss Axiovert 40 CFL Microscope in Laboratory 248 at the St Andrews School of Medicine (SASoM). This should be read in conjuction with the appropriate risk assessment.

3.0 Responsibilities –

It is the responsibility of all users of the Zeiss Axiovert 40 CFL Microscope within the SASoM to comply with this SOP.

4.0 Procedure –

NEVER HANDLE THE BULBS WITH BARE HANDS – ALWAYS USE GLOVES!!

Turn off the microscope at the mains and remove the plug. Allow the microscope to cool down. Turn off the power to the HB0-50 Power Supply and remove the cable.

The bulb can be accessed through the removable panel on the side of the Lamp assembly. This is illustrated below:

Insert the special red-handled 'Qualitat 368 3SW' screwdriver into the small hole below the word OPEN and unscrew. Now release the small spring tab in the bottom right hand corner of the casing and pull the drawer assembly towards you. Remove the drawer fully from the casing and place carefully on the bench. In some cases the small tab may have been broken off and so will not be present.

The bulb is removed by releasing two spring-loaded clips at the top and bottom of the bulb which hold it vertically in place. Firmly squeeze the silver lever attached to the heat dissipater at the top of the bulb and release from the bulb. Hold the bulb by the end (the metal bit) and then similarly release the lower clip again by squeezing the silver lever. The bulb should now just lift out of the holder.

Since the bulb contains mercury it must be disposed of in the correct manner – Graeme Russell in stores will accept the bulb for disposal.

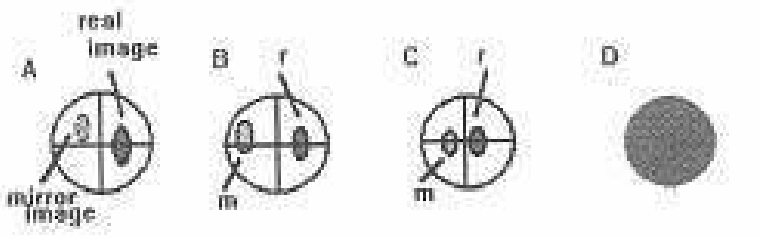
Carefully remove the new bulb from the packaging and then fit into the holder by squeezing the spring-loaded clip at the bottom. Rotate the bulb so that the small notch (mirrored bit) on the lamp is NOT in the light path, so either facing to the front or back of the lamp housing is OK. See diagram below – the bulb should be in POSITION A

Secure the clip to the top of the bulb and then slide the assembly back into the casing so that it clicks (if the clip is present). Secure with the grubscrew

Restore power and check that the bulb is working.

Alignment of the Bulb:

Switch the bulb on and then slide the green filter into position. To align arc, remove an objective (or the black cap if not all the lenses are being used), rotate empty space into viewing position and place a white card flat on stage, revealing real and mirror arc images.



Centre and Focus the image using the three adjustment screws on the outer casing,

Finally ‘Defocus’ images to evenly illuminate field; reinstall objective.

5.0 Personal protection -
Howie coat must be worn at all times.

6.0 Spillages -
Always clean up any spills immediately after use.

Only you know what you have spilt and are aware of that chemicals hazard.

Mop up spills with paper towels. Wash the site of spillage with water & detergent.

7.0 General maintenance -
Clean surfaces of the apparatus with soft cloth and mild detergent.

To clean the lenses and other glass components, simply blow dirty away using a commercially available blower and wipe gently using a piece of cleaning paper (or clean gauze).

If a lens is stained with fingerprints or oil smudges, wipe it gauze slightly moistened with commercially available absolute alcohol.

Do not attempt to use organic solvents to clean the microscope components other than the glass components.

8.0 Maintenance -
Microscope to be serviced once a year by a qualified engineer.

9.0 Training -
All users have to be trained before using the Instrument by a designated person.

10.0 Related documents –

10.1 Equipment manual

10.2 'Lamp Hours' Log '

10.3 Risk assessments – RA/GEN/016

11.0 Approval and sign off –

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