Manual for Microscope Model 100 FL Special

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Construction of the microscope:

Objectives:

All objectives are produced according to DIN-standard. The 40x objective has a spring mount to avoid breakage of specimens and objective. The three-hole objective revolver makes it easy to change between the different objectives.

Focusing knobs and stage stop adjustment:

The two adjustment knobs for coarse and fine focussing are placed on both sides of the microscope. The biggest knob is used for the coarse adjustment and the small knob is used for the fine adjustment.

A vertical finger screw is placed behind the stage. When the lock nut is loosened it is possible to turn the finger screw, and thereby settle the upper limit of the stage movement. This protects the specimen from touching and/or damaging the objectives. The stage stop adjustment (specimen protection) will also make it easier to focus fast. The microscope is delivered with a pre-set stage stop adjustment and it should therefore not be required to make further adjustments.

Stage:

The specimen is placed on the stage by pressing down on the two stage clips and then placing the specimen under them. The specimen can be moved by pushing it gently with your fingers.

Condenser and iris diaphragm:

The condenser has a built-in iris diaphragm with a little handle for adjustment. The adjustment of the iris diaphragm is important to obtain a good image. Closing the iris diaphragm decreases the light but increases the contrast and depth of sharpness of the image. Adjustment of the iris diaphragm might be necessary when switching between objectives.

Bulb:

The bulb is placed in the lamp housing (the black tube). It is a bayonet bulb 220 V / 20 Watt.

Fuse:

The fuses are mounted at the rear side of the main microscope body.

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They can be found under the plastic covers labelled “FUSE”.

Connecting the microscope to mains

The microscope is developed for the use with 220-240 V / 50-60 Hz.

General use of the microscope:

- Put the microscope on a dry and clean place.
- Put the mains cord in a socket and turn on the microscope.
- Adjust the light intensity with the iris diaphragm.
- Place a specimen on the stage.
- Move the stage up and down with the coarse focusing knobs to obtain a clear and sharp image. Use the fine focusing knobs to make the last (fine) adjustment.
- Rotate the objective revolver so that the preferred objective is moved into the light path. The objectives are parfocal. This means that only a minor adjustment in focus might be necessary, when changing magnification.

Changing the bulb:

- Pull out the plug from the mains and let the microscope cool down for some minutes.
- Warning: The tube and the old bulb can be very hot, so take care of your fingers!
- Unscrew the black vertical tube that holds the lamp.
- Pull out the old bulb by pressing it down and turning it counter clockwise. Replace it with a new bayonet bulb 220 V / 20 Watt.
- It is important that the new bulb is handled very carefully and is not touched directly with the fingers. Otherwise the glass surface is damaged by the fingerprints and the life of the bulb is significantly reduced. Use a clean cloth, plastic or a piece of lens paper between the fingers and the bulb when handling the bulb.
- The lamp house is reattached.

Maintenance:

- Put the microscope on a dry and clean place.
- The objectives are manufactured according to strict standards and tested in the factory. Please never try to disassemble them yourself.
- The surface of the lenses must never be touched with fingers or hard things. If the glass surfaces are dirty use a clean and previously unused piece of lens paper to clean it.
- Remove dust from the glass surface with a clean lens brush or an air dust cleaner for optics.
- Always use a specialized optical cleaning agent and wipe the glass surface gently several times. Each time with a fresh piece of lens cleaning paper.

Adjustment of friction:

- The friction in the focussing adjustment can be altered with the enclosed special key if the microscope cannot hold the focus because it drops down. It is also used if the focusing knob is very tight to turn. The tip of the key is placed in one of the four holes in the axle inside one of the focusing knobs. It is then possible to tighten or loosen the ring that is placed around the axle, and with it adjusting the friction.

Caution:

- Never turn the two focussing knobs against each other. It will damage them!
- Turn off the microscope when it is not used, and cover it with the enclosed dust cover.
- Let the microscope cool down for some minutes with the lamp switched off before moving it from one place to another. This will minimize the risk of bulb damage.