



Microscope Stage Interface Slice Chamber

MS3

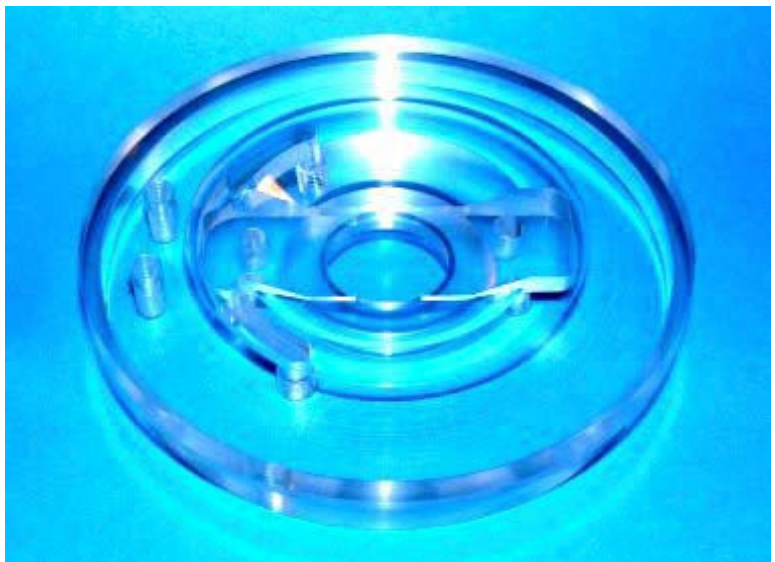
Interface Preparations

The MS3 chamber design is based on our BSC2 chamber and allows interface methods of slice maintenance on a compound microscope stage. Experiments can be performed either at room temperature or at a pre-determined temperature with the addition of our MH02 in-line solution heater system.

FEATURES

- * Slices supported on a removable template.
- * Interchangeable templates allow single or dual channel operation.
- * Glass coverslip base allows for high quality imaging with normal condenser optics.
- * Template design with diamond shaped flow cell for perfusion of slices with a small dead-space.
- * Temperature control unit available.
- * Custom designed templates available.

The MS3 chamber is constructed from clear acrylic having a diameter of 100mm, overall height is 25mm. It is normally arranged on the microscope stage with an adaptor plate to allow the optical base of the chamber to be in close proximity to the microscope condenser optics for optimal visualisation. Ideally it sits within the depth of the microscope stage. The slices rest in flat channel which has a central coverslip base 20mm in diameter. By placing various types of templates which have an inlet and exit well for perfusion solution, fluid flows in a narrow diamond shaped channel above the coverslip base whilst a high oxygen tension is maintained above it. The slices normally rest on a piece of lens tissue while being perfused from one end of the insert. Perfusion solution height is adjusted at the exit well to maintain interface mode. This is done by arranging lens tissue to wick solution into the exit well where it is removed by a tube attached to a suction line / peristaltic pump system. The pre-moistened carbogen gas enters from two inlets at the bottom of the chamber and is then deflected by a profiled acrylic lid on to the surface of the interface slice preparation resting in the central area of the glass coverslip. At the exit well perfusion solution can be collected for re-circulation or analysis. The half circle profiled acrylic lid allows access for stimulating and recording electrodes. Provision is made for a reference electrode wire to enter the proximity of the insert. The chamber can be set up for temperature controlled perfusion solution with our in-line heater system MH02 is used in conjunction with our proportional temperature controller PTC03. A further requirement for temperature control is that the pre-moistened gas is supplied from a gas wash bottle immersed in a standard laboratory heated water bath to increase the input temperature and humidity levels.

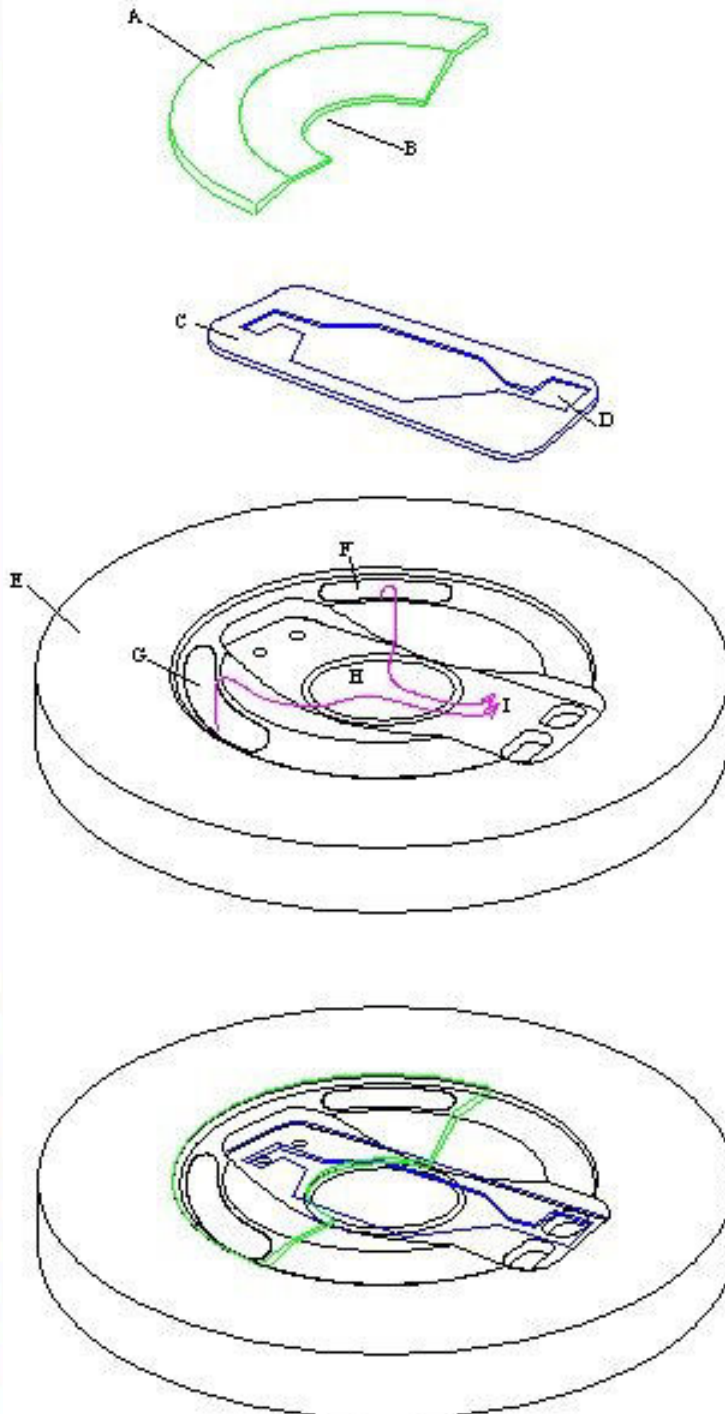




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AN EXPLODED VIEW OF THE CHAMBER COMPONENTS.

- [A]** DEFLECTOR LID
- [B]** CUT-OUT IN LID FOR ACCESS TO SLICES
- [C]** TEMPLATE
- [D]** EXIT HOLE FOR PERFUSION SOLUTION
- [E]** MAIN BODY OF MS3 CHAMBER
- [F]** & **[G]** PORT HOLES FOR ENTRY OF HUMIDIFIED CARBOGEN GAS MIXTURE
- [H]** GLASS COVERSIP BASE AND RESTING PLACE FOR SLICES WHERE HUMIDIFIED CARBOGEN GAS IS DIRECTED BY LID **[A]** IN DIRECTION SHOWN BY ARROWS **[I]**