

### Modular Incubator Chamber Instructions

#### DESCRIPTION :

The Modular Incubator Chamber (MIC-101) utilizes a surface-type seal where all portions of the O-ring are uniformly compressed by a stainless steel ring clamp for a reliable air tight seal. The cylindrical walls and semi-spherical top and bottom provide minimum gas flow resistance and no inherit dead space during initial purging. The chambers have an integrated stacking feature for storage during or after experimentation. All units are molded from high quality polycarbonate and will not break, crack or cloud with extended use.

#### OPERATION :

To facilitate ease of operation of the chamber please observe the following procedures :

##### To Open Chamber :

1. Grasp chamber and ring clamp stainless steel ) firmly with left hand opposite clamp handle.
2. Place right hand firmly over clamp handle and open slowly. The clamp can be easily removed (or replaced) from the chamber by extending the clamp to its full diameter. This can be accomplished by opening the clamp handle to its full extent.
3. Remove clamp.
4. Using both hands, remove the lid and trays. Always use both hands when handling lid, base, trays and the clamp, this will prevent accidental spills.

##### To Reassemble Chamber :

1. Check all O-ring surfaces making sure they are free of any particles which could cause leaks. O-ring should be cleaned periodically (see cleaning instructions). If chamber leaks, first inspect O-ring and O-ring grooves, making sure they are clean and not damaged. If the chamber still fails to seal, check adjustment of the clamp; one or two turns of the adjustment are all that is necessary to tighten the clamp(see ring clamp instructions ).
2. Position trays in base making sure that they are seated properly.
3. Place lid on base.
4. grasp clamp with left hand and center clamp at position where base and join. Left hand should be held firmly against clamp and chamber. Slowly close clamp handle with right hand making sure clamp is centered. Chamber is now ready to be purged with gas.

##### To Gas the Chamber :

1. Open both inlet and outlet ports (tygon tubing with white plastic clamps).
2. Attach inlet port tygon tubing to a source containing the desired gas mixture.

**Both port clamps must be open during this procedure. The chamber may rupture under excess pressure. Observe warning on chamber:  
CAUTION DO NOT EXCEED 2 PSI.**

3. We have found that a rate of 20 liters/min completely purges chamber in 4 minutes (Maximum flow rate is 25 LPM) (See Flow Meter Instructions for Hot Box System flow rates). Since flow rates and experimental conditions vary, we recommend that each investigator determines the time and frequency of flushing. Flow meters are available from Billups-Rothenberg, Inc.
4. After chamber has been purged disconnect gas source.
5. Seal chamber by closing plastic clamps (white).
6. Put Chamber at appropriate temperature either in a conventional continuous flow CO2 incubator, an oven, or a warm room. If the chamber contains a large quantity of tissue culture plates, we recommend re-flushing system after 1 hour of incubation, to remove any gases that may have been trapped in the plasticware

**HUMIDITY :**

**Instruction Sheet : Modular Incubator Chamber**

The chamber must be humidified to prevent excessive evaporation of cultures. This can be accomplished by placing a petri dish with 10-20 ml of sterile water in the chamber.

**STAINLESS STEEL RING CLAMP :**

The stainless steel ring clamp is the portion of the clamp that wedges the base and lid flanges together. As torque is applied to the adjustable bolt of the clamp handle, an inward radial force is created in the ring clamp. This force wedges the flanges together causing them to squeeze the O-ring. The cam-action of the handle has been adjusted at the factory to provide a reliable, air-tight seal. If clamp at some time needs to be adjusted, loosen the locking nut, found under handle, and turn bolt clockwise to tighten and counter clockwise to loosen clamp. After adjusting tighten locking nut.

**STACKING CHAMBERS :**

First lightly lubricate the four indexing tabs of the lid (use silicone grease). Center the base of the top chamber onto the lid of bottom chamber tab while gently pressing down, rotate the upper chamber.

**CLEANING :**

The chamber may be sterilized with either 70% ethanol, 5% formalin, sterilizing gas mixtures (when sterilizing with ethylene oxide the units should be placed in a vacuum chamber and de-gassed). The O-ring should be cleaned periodically to ensure a proper seal. When removing O-ring be careful not to scratch the O-ring groove. Wipe the O-ring with Kimwipe and apply a minimum amount of silicone grease evenly and wipe off excess. Grease is used only for proper seating of O-ring and not for sealing.

**NOTE: CHAMBERS SHOULD NOT BE AUTOCLAVED**

**CHEMICAL RESISTANCE :**

Exposure to solvents such as strong acids, all bases and organic solvents (polycarbonate is soluble in aromatic and chlorinated hydrocarbons) should be avoided. Avoid prolonged exposure to alcohol.

**PART LIST :**

| Cat. No. | Description  |
|----------|--|
| MIC-102  | Lid (polycarbonate)*                               |
| MIC-103  | Base (polycarbonate)* with O-Ring and Tubing Clamp |
| MIC-104  | Tray (polycarbonate)*                              |
| MIC-105  | Stainless Steel Ring Clamp                         |
| MIC-106  | O-Ring   |
| MIC-107  | Tubing Clamp with Tubing                           |

\*These parts are guaranteed for one year against defects, leaks and breakage. PLEASE DO NOT return any warranty items without written authorization.

As we cannot anticipate nor control conditions of product application, we do not warrant suitability or favorable results.