

Tyler Research Corporation

500ml Chemostat

The Tyler Research 500ml chemostat is intended for the growth and maintenance of bacterial cultures for input into modified Robbins devices and other biofilm systems. The device consists of a glass vessel, a Teflon and glass rotor assembly, and a type 316 stainless steel ported cover.

There are 5 locking ports on the cover, each of which is capable of accepting and sealing a cylindrical object (plug, probe, tube or thermometer, for example) with diameters ranging from 6mm to 1/4". Typically the four ports on the perimeter of the cover are used for:

- 1) thermometer or thermocouple
- 2) filtered air input
- 3) culture removal tube
- 4) spare sampling port

To populate a port, loosen the knurled plug by turning CCW approximately 2 full turns. Gently insert the tube or sensor to the appropriate depth, and tighten the knurled plug until the inserted object is gripped firmly by the O-ring inside the plug. In the case of these four perimeter ports, the end of the sensor or tube should be positioned approximately 10mm below the liquid surface and 10 - 20mm above the level of the upper rotor element, which can be adjusted vertically by turning and sliding it gently along the rotor shaft.

The port closest to the center of the cover is usually used as an input channel (for input of sterile medium or recirculated effluent from a Robbins device). The end of this tube should be positioned approximately 30 - 40mm above the liquid level.

Any ports that are not populated should be covered with foil, blocked with a porous foam plug, or sealed with a solid glass plug to prevent airborne contamination. The capillary protruding from the cover serves to equalize air pressure inside the chemostat, and should always be left in place.

The cover holds two O-rings to provide a sterile seal with the glass reservoir. Exercise care in removing or installing the cover to avoid breaking the reservoir's glass rim. The preferred method is to gently rotate the cover while installing or removing it from the reservoir. Individual components of the chemostat should be thoroughly cleaned, dried and the device assembled prior to autoclaving.

Agitation and circulation is provided by indirect drive of the rotor via placement on a standard magnetic stirrer.

