



Instruction Manual

Coverslip Clamp Chambers

(MS Series)

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Introduction

The coverslip clamp dish represents a unique concept in experimental chamber design. It allows the user to constantly replace the bottom of the dish while leaving the rest of the dish intact. This way, cells can be cultured on coverslip glass (also called coverglass) and then the coverslip can be incorporated into the chamber at the time of the experiment. The chamber, which can be quite elaborate, does not need to be occupied for days in the incubator itself.

Most of the MS series chambers are made from Dupont Delrin™. Delrin is a polycarbonate plastic but it is not clear and somewhat more hydrophobic than Lexan™ (GE). In fact, Delrin is easier to machine and its black color makes it more optically friendly than Lexan™. The size and shape of the chamber match the dimensions of the Corning 35mm petri dish. The chamber can fit wherever a Corning 35mm dish can fit, i.e. a temperature control chamber, etc.

Chamber Types

ALA Scientific Instruments has a complete line of chambers based on the securing ring design. The following is a list of part numbers and the descriptions of the different chambers available:

Key code:

S = stainless steel securing ring; **D** = Delrin securing ring; **P** = 2 perfusion ports (180° apart)
T = thermal foil attached to stainless steel securing ring (25.5Ω, 0.6"/15.24mm hole);
W = chamber walls removed;

MS-502 = chamber with 3/4"/19mm center hole used with 24/25mm coverglass

MS-508 = chamber with 1/2"/12.7mm center hole used with 18mm coverglass

MS-518 = chamber with oval center hole used with 24/25mm coverglass

Please note: whenever a **T** is in the part number the securing ring used will be a 1/2"/12.7mm center hole stainless steel type. This type of securing ring best supports the dimensions of the thermal foil. Any other securing ring will obstruct the viewing area. Also, delrin securing rings can not be used with the thermal foil.

The different chamber options are:

MS-502S; MS-502SP; MS-502SPT; MS-502SW; MS-502SWT; MS-502SPWT

MS-502D; MS-502DP; MS-502DW; MS-502DWP

MS-518S; MS-518SP; MS-518SPT; MS-518SW; MS-518SWT; MS-518SPWT

MS-518D; MS-518DP; MS-518DW; MS-518DWP

MS-508S; MS-508SP; MS-508SPT; MS-508SW; MS-508SWT; MS-508SPWT

MS-508D; MS-508DP; MS-508DW; MS-508DWP; MS-OPC-REF

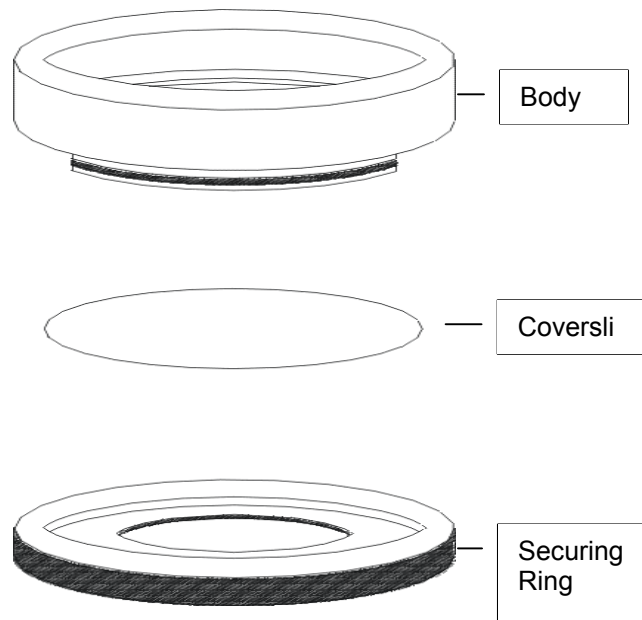
Please use the above key codes to find the correct part number.

Materials

All chambers that are black in color are made of Dupont Delrin™. Chambers can be made out of Lexan™ (GE) by special request. Delrin™ is preferred since it is opaque to light (black in color). Securing rings can be made out of stainless steel or Delrin™. Stainless steel is recommended. Stainless steel is also necessary for temperature control applications.

Setup

A coverslip clamp chamber is easy to assemble. First place the Securing Ring on a firm level surface with the lip upward. Place the coverslip, cell-side-up, onto the ring, being careful to center it. Push the body of the dish into the securing ring by applying firm pressure. The sealing o-ring will be compressed against the glass and form a water tight seal. The securing o-ring holds the Securing Ring in place by friction. When applying firm pressure to the assembly, be sure to push down evenly all around. The chamber should now have a leak free seal.



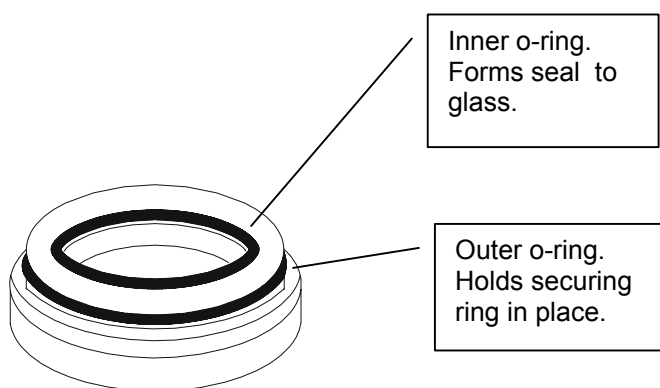
To open the chamber, simply pull the securing ring off. If it is difficult, you can use a small tool such as a screwdriver, just be careful not to damage the chamber. The chambers are designed to be opened by hand and this is the preferred method of opening.

Care and Cleaning

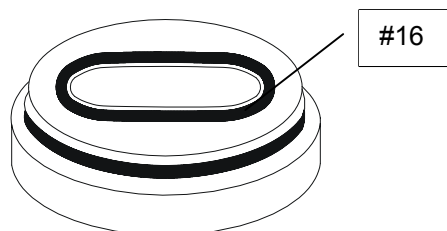
Chambers should never be cleaned with petroleum products. Regular dishwashing soap is ok, and diluted bleach solutions can be used. A thorough cleaning should include removal of the o-rings to clean the o-ring slots as well. The chambers can be cleaned in a dish washer. Autoclaving is also possible, but not recommended since high heat can warp and degrade plastics. For cleaning and sterilization, use as low a temperature as possible and never exceed 110°C. Always be sure chambers are clean and dry when they are packed for storage.

The stainless steel securing ring is made from 316 stainless steel. It is amongst the most durable steel available. However, the use of saline solutions can affect almost all steels. After all, it is called “stainless” not “stain proof” or “stain free,” so some pitting or staining is possible after a while. Try to keep the steel securing rings clean and dry.

Cover slip clamp dishes are designed to be used with #1 or #2 round coverglass or coverslips. Glass thickness ‘0’ is generally too fragile to be used. Most dishes are made to be used with 25mm diameter glass, but some dishes are built for 18mm glass at the customer’s request. From the size of the inner o-ring it is easy to tell which size glass is required for your dish.



Round shaped chamber



Oval shaped chamber

O-ring replacement guide:

Standard round chambers for 25mm glass: Inner o-ring = #19,
Outer o-ring = #21

Note: Outer o-ring for all chambers is #21

Inner o-ring for 18mm glass chamber is #16.
Inner o-ring for oval shaped chamber is #16.

(O-rings are generally made of Buna, but Viton is available upon request.)

Replacement o-rings and parts are available from your distributor or ALA. (www.alascience.com)

Troubleshoot

Leaks

The coverslip clamp dish stays closed by the friction of the securing ring to the outer o-ring. The outer o-ring does not help seal in the liquid. Only the inner o-ring seals the liquid in. If the chamber leaks it can be for several reasons:

Problem	Solution
1) Inner o-ring is not seated.	Press inner o-ring into groove.
2) Outer o-ring does not grip securing ring.	Replace outer o-ring, replace securing ring.
3) Cracked glass.	Open chamber, inspect/replace glass.
4) Nicked inner o-ring.	Replace inner o-ring.
5) Warped dish.	Refer to factory.
6) Warped securing ring.	Refer to factory.
7) Particles trapped on or under o-rings.	Remove/clean o-rings and groove.

Limited Warranty

ALA Scientific Instruments Inc. agrees to warranty Coverslip Clamp Chambers also known as Coverslip Clamp Dishes for a period of 90 days from date of shipment against defects in workmanship that result in leakage. During this time period ALA will repair or replace the chamber as necessary to remedy the defect. Damage to dishes from mishandling, falls, heat, chemicals or accidents will not be covered at all. ALA Scientific is not responsible for materials that are incompatible with various cell types and ALA does not make any guaranty of cell viability in any of our chambers.

It is the customer's responsibility to choose the proper materials for their work from the choices given.

Return shipment is the customer's responsibility. Your rights under this warranty may vary from state to state and country to country.