**MS Series Chambers**

### Ordering Details, Specifications and Accessories

**Ordering Part# Key Codes:**

**Part# Prefixes**

- **MS-502** = Chamber with 3/4"/19mm center hole, stainless steel securing ring, 2 perfusion ports, side walls cut away, and a thermal foil attached to the securing ring.

- **MS508** = Chamber with 1/2"/12.7mm center hole used with 18mm #1 round coverglass.

- **MS518** = Chamber with oval center hole used with 24/25mm #1 round coverglass.

**Part# Suffixes**

- **D** = Delrin Securing Ring

- **P** = Two Perfusion Ports (180° apart) inlet/outlet are at bottom above the cover glass

- **S** = Stainless Steel (SS) Securing Ring

- **T** = Thermal foil (25.5), 0.8 - 15.24mmhole) attached to SS securing ring

- **W** = Chamber Walls Removed

### MS Series Chambers

**Introduction**

The MS series chambers secure coverslips containing cultured cells or tissue slices for electrophysiology or imaging techniques. The chambers fit directly in a 35mm microincubation or microscope specimen holder and require no additional platforms or adhesives.

**MS Body**

**Cover Slip**

**Securing Ring**

**MS Series Explosion View**

The MS series of coverslip clamp chambers represents a unique concept in experimental chamber design. It allows the user to constantly replace the bottom of the chamber while leaving the rest of the chamber intact. Cells can be cultured on a coverslip glass that can be incorporated into the chamber at the start of the experiment. The chamber, which can be quite elaborate, does not need to be occupied for days in the incubator itself. The replacement of the glass bottom also ensures a fresh, clear optical path each time.

With the MS series of chambers, cells can be cultured on glass cover slips and then inserted into the chamber quickly and easily. Each chamber has two main components: a body and a securing ring. These two parts snap together with minimum force to secure the coverslip. All seals are secured with Buna o-rings (Viton is available). Excellent visibility is obtained for use with a host of different microscopy and imaging techniques including oil immersion objectives. In some chamber styles, a small “mini chamber” is formed when the coverslip and glass ring is inserted which can be used as a mini-perfusion chamber. The MS series chambers are reusable, washable, autoclavable, and easy to assemble. They fit into the majority of commercially available microincubator systems, wherever a 35mm Petri dish can fit.

Most of the MS series chambers are made from DuPont Delrin. Delrin is a polycarbonate plastic. It is black, opaque, 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 securing ring material are made of Delrin or 316 stainless steel. The Delrin rings are useful for optical imaging and where temperature control of the chamber will not be used. The stainless steel ring is needed when the chamber will be used for temperature control because the steel has better thermal transfer properties than Delrin. Both ring types have a small depression for easy installation of the cover glass.

MS series chambers are designed for electrophysiological and imaging experiments. The many different styles provide easy features such as recording electrode access, different perfusion configurations, and a variety of chamber shapes and sizes. Chambers can also be ordered with thermofoils attached for heating. In addition, ALA offers heating and cooling microscope stages into which MS series chambers can be placed.

### Ordering Part# Key Codes:

**SAMPLE: MS-518SWPT**

- Chamber with oval center hole, 18mm coverglass, SS, low profile, perfusion ports, includes thermal foil.

**Ordering Part#**

- **MS-502**
- **MS508**
- **MS518**

**Part# Prefixes**

- **MS-502** = Chamber with 3/4"/19mm center hole used with 24/25mm #1 round coverglass.
- **MS508** = Chamber with 1/2"/12.7mm center hole used with 18mm #1 round coverglass.
- **MS518** = Chamber with oval center hole used with 24/25mm #1 round coverglass.

**Part# Suffixes**

- **D** = Delrin Securing Ring
- **P** = Two Perfusion Ports (180° apart) inlet/outlet are at bottom above the cover glass
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- **T** = Thermal foil (25.5), 0.8 - 15.24mmhole) attached to SS securing ring
- **W** = Chamber Walls Removed

*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 ring will obstruct the viewing area. Also, Delrin securing rings can not be used with the thermal foil.*
MS Series Chambers

Petri Dish Style Chambers

These chambers have no perfusion ports and they have walls like standard Petri dishes. They also feature an inner chamber.

- **MS-502S and MS-502D** - standard chambers with 3/4"/19mm center hole. These chambers use 24/25mm #1 round coverglass. The chamber is the same size as the 35mm Corning Petri dish. The dish has an inner chamber for small volume work. The S stands for the stainless steel securing ring and the D stands for the Delrin securing ring.

- **MS-508S and MS-508D** - standard chambers that have 1/2"/12.7mm center hole. These chambers use 18mm #1 round cover glass. This chamber has a smaller view area than the MS-502’s but the small inner chamber makes a very small volume chamber where shallow fluid heights are needed.

- **MS-518S and MS-518D** - standard chambers that have an oval shaped inner chamber. These chambers are excellent for laminar fluid flow. The chambers use 24/25mm #1 round cover glass. The center oval also forms a small chamber where shallow fluid heights are needed.

O’ring view of MS-518

O’ring view of MS-502

Dimensions

The MS-508 chamber has the same dimensions as the MS-502 except the center hole is 0.5”/12.7mm.

Perfusion Chambers with Petri dish like Walls

These chambers are very similar to the standard types but instead include 2 perfusion ports. All of these types come with two right angle barbed fittings that attach to 1/16” or 1.5mm ID tubing. The points where the liquid enter/exit the chamber are located within 1mm of the bottom of the chamber.

- **MS-502SP and MS-502DP** are very similar to the standard MS-502 types but these include 2 perfusion ports. The inflow and outflow holes within the chamber are about 1mm above the coverglass.

- **MS-508SP and MS-508DP** are very similar to the standard MS-508 chambers. These feature two perfusion ports like the MS-502 perfusion ports.

- **MS-518SP and MS-518DP** are very similar to the standard MS-518 chambers that have an oval shaped inner chamber. These chamber are excellent for laminar fluid flow and provide perfusion inlet and outlet.

Perfusion and Non-Perfusion Chambers with No Walls

The options include Delrin bottom, stainless steel bottom, perfusion ports, and thermal foils attached. Electrode access is greatly improved with the walls removed.

- **MS-508W** chambers offer low walls for great pipette access even with upright microscopes! The MS-508SWP features perfusion ports built right in. The absence of ports on the SW version gives 360° access to the chamber. All low wall chambers allow at least 30° pipette access.

- **MS-518DWP** and **MS-518DW** offer the same advantages as the **MS-508W** above, but feature an oval chamber shape for enhanced perfusion characteristics.

- **MS-502SWPT** features a thermofoil (shown left) mounted to the stainless steel securing ring (shown right) for temperature control. It’s possible to add thermofoils to most MS chambers, so consult your distributor or ALA for specifics. Please note that thermofoils can only be mounted on stainless steel securing rings with a round 0.5”/12.7mm diameter hole, but most chambers can be supplied with this style securing ring.

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