



**TYLER**  
**Research Corporation**  
Biomedical Engineering



**Product:** HPMR-10SS  
HPMR-24SS

**Material:** Stainless steel with silicone or Viton seals, stainless steel inlet/outlet ports and stainless steel screws

The HPMR-10SS and HPMR-25SS are manufactured from medical grade stainless steel, a durable corrosion, stain and rust resistant alloy. These devices may be safely sterilized using an autoclave.

**IMPORTANT:**

**Sterilizing HPMR-XXSS series devices:**

1. The fully assembled HPMR-XXSS may be autoclaved or disassembled and sterilized in parts.
2. Place the entire device in an autoclave bag or wrap in surgical towels and tape the package closed with an indicating tape.
3. Refer to the manual of the autoclave in use for proper loading techniques and correct positioning of the items to be sterilized. Sterilize at 121°C for 15 minutes.

**ALBERNATIVE METHODS FOR STERILIZATION:**

Clean the HPMR-XXSS with mild detergents and warm water followed by one or more of the following procedures:

1. Exposure to ethylene oxide gas (available in many hospitals)
2. Exposure to ionizing radiation (Cobalt 60 gamma or X-rays)
3. Treatment with agents containing 2% glutaraldehyde (e.g. Cidex)
4. Soaking overnight in sodium hypochlorite solution (5%)
5. Prolonged exposure to sodium metabisulfite solution (15 g/liter)

In the event that treatment 3, 4 or 5 is used, it is important to soak and rinse the device in sterile deionized water thoroughly before placing back into service.

## HPMR-10SS / HPMR-24SS

### Assembly/Disassembly Instructions:

The HPMR-XXSS series biofilm systems are precision devices consisting of two stainless steel manifold halves, two stainless steel inlet/outlet fittings, stainless steel socket head cap screws connecting the manifold halves, silicone or Viton O-rings, and ten or twenty-four stainless steel biostud holders with silicone or Viton seals and stainless steel ejection screws.

Assembly or disassembly of the HPMR-XXSS device for cleaning requires a 5/32" hex drive wrench and a #2 Phillips screwdriver.

### Disassembly of the HPMR-XXSS

1. Turn the biostud holders counterclockwise to remove them from their ports. If the holders are populated with biostuds, remove the biostuds from the holders by turning the panhead screws fully clockwise using a #2 Phillips screwdriver to partially eject the biostuds. Grasp the stems of the partially ejected biostuds with sterile forceps to remove them for analysis.
2. If desired, remove the inlet/outlet nipples from the lower manifold by turning counterclockwise with a wrench (for routine cleaning and sterilization this step is not required).
3. Place the HPMR-device face down and use a 5/32" hex-drive wrench to remove the socket head capscrews connecting the two manifold halves.
4. Carefully separate the two stainless steel halves and remove the O-ring.
5. Wash all components with detergent and water, and thoroughly rinse with deionized water. Solvents may be used to remove hydrocarbon residues as required. Allow to dry before reassembly, and lubricate all O-rings with silicone O-ring lube to promote sealing and prolong O-ring life.

### Assembly of the HPMR-XXSS

1. With the HPMR base upright on a bench, place the large O-ring in the groove surrounding the central channel. Align the top manifold and place it gently onto the base, being careful not to dislodge the O-ring. While holding the halves firmly together, turn the manifold over on the bench to expose the holes for the socket head cap screws. Using a 5/32" hex drive wrench, install and partially tighten the cap screws, leaving a 1mm gap between the top and base of the manifold. Then tighten the screws uniformly, still leaving a tiny gap (approximately 0.1mm) between the manifold halves. Finally, tighten them sequentially just to bring about surface-to-surface contact between the manifold halves. **DO NOT OVERTIGHTEN!** The O-ring is fully compressed and any tightening beyond surface-to-surface contact will simply stress the threads in the upper manifold.
2. If the inlet/outlet fittings were removed during cleaning, replace the O-rings in the grooves surrounding the thread and carefully screw them into the endport sockets only until surface-to-surface contact has been made to gently compress the retained O-ring.
3. Use the #2 Philips screwdriver to back the panhead screws off of the surface of the holders approximately 1/4". Populate the holders with biostuds of the appropriate material by pushing the stem into the holder until the shoulder of the biostud seats in the end of the holder.
4. **NOTE:** The flat recessed ring in the bottom of each manifold port is a precision sealing surface against which the O-ring in the face of the biostud holder seats. This must be kept free of foreign matter and scratches. Return the populated biostud holders to their respective ports, tightening firmly to affect a seal.