

# Tyler Research Corporation

## High Pressure Biofilm Device BD-10SS

The Tyler Research High Pressure Biofilm Device BD-10SS is machined entirely from Type 316L Stainless Steel with Viton seals. The system is designed to contain 10 sampling coupons of virtually any composition, each with a surface area of 100mm<sup>2</sup>. The coupons are held in a linear array along a channel of square cross section, forming part of the channel wall. The BD-10SS may be spliced into a closed-loop system, connected via ½" Swagelok fittings. Pressures of 800 kPa and flow rates of up to 4 liters/minute are supported.



The system may be sterilized prior to use by a variety of methods, including exposure to chemicals, ionizing radiation, dry heat, and superheated steam (autoclaving). Coupons may be installed prior to sterilization provided they are capable of withstanding the procedure. We recommend that ball valves be installed within 50cm of the inlet and outlet ports of the manifold so that the system

may be isolated for removal of plugs and extraction of coupons throughout the experimental procedure. Each coupon holder contains a screw for ejecting the coupon. The screws must be retracted by approximately 10mm to permit the coupons to be seated fully in the holders (see schematic figure below).

There are two Viton O-rings in each coupon holder: an internal bore seal for the coupon, and an external face seal to permit the coupon holder to seal in the manifold. Coupon holders should be installed in the manifold finger-tight only. The face-seal O-ring will begin to compress against the seat in the last half-turn of the holder. It is important to continue turning the coupon holder until metal-to-metal contact is achieved. This assures that an appropriate high-pressure seal has been established.

In high vibration installations, we recommend that all manifold screws be sealed to prevent their premature release.

