Photon's DIY Depth Filter Assembly

This assembly can be used at the bottom of any column of biomass or adsorbent media, or even inside gas lines to capture fine particles without significantly impeding liquid or gas flow. Depth filtration is especially important wherever the previous zone's particles *cannot* enter the next zone, such as filtering the product solution right before solvent recovery.

Figure 1: Sanitary Cap & Gasket: Filtrate fluid outlet
…will be attached to ***bottom*** *of perforated plate segment (Figure 2)*
Note: This is just an example, using a flat cap with two outlet ports.

Alternate: A bowl/dome cap with a single central port
with or without a conical reducing adapter
may be used for this last sanitary segment after the filtration.

Figure 2: ***Top*** *of Perforated Plate Sanitary Segment: Base support …of depth filter fiber medium*

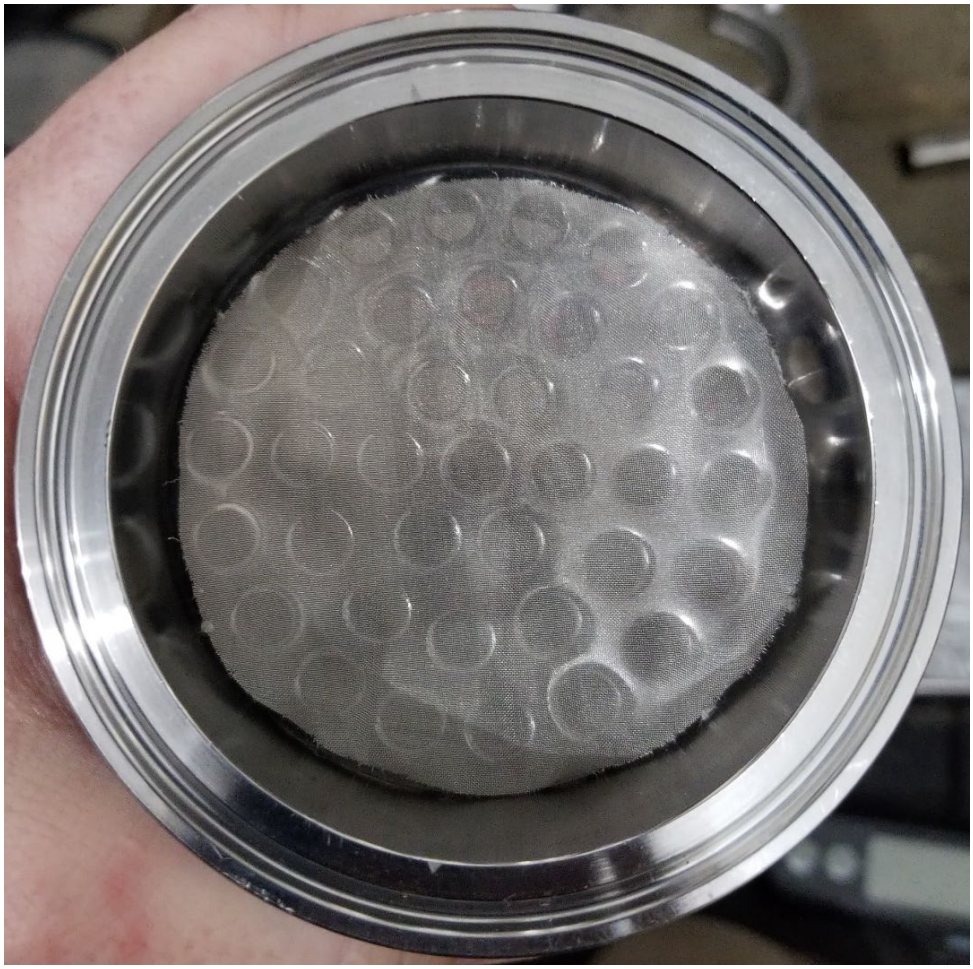

Figure 3: Fine Screen: 10-100µm to catch any loose fibers
…placed on top of perforated plate (Figure 2)

Alternative: Use fine screen gasket on bottom sanitary cap in *Figure 1*.

Figure 4: Cotton or Glass Fiber: Depth filter medium
…packed sufficiently tight to fit snug, but NOT overly compressed,
covering all area of perforated plate and fine screen,
and filling volume up (about 1 inch) to flange in Figure 3.

Note: Brush around parallel to the inner circumference to fill gaps, then brush radially inward across the flange to remove fibers from the sealing face to avoid small leaks.

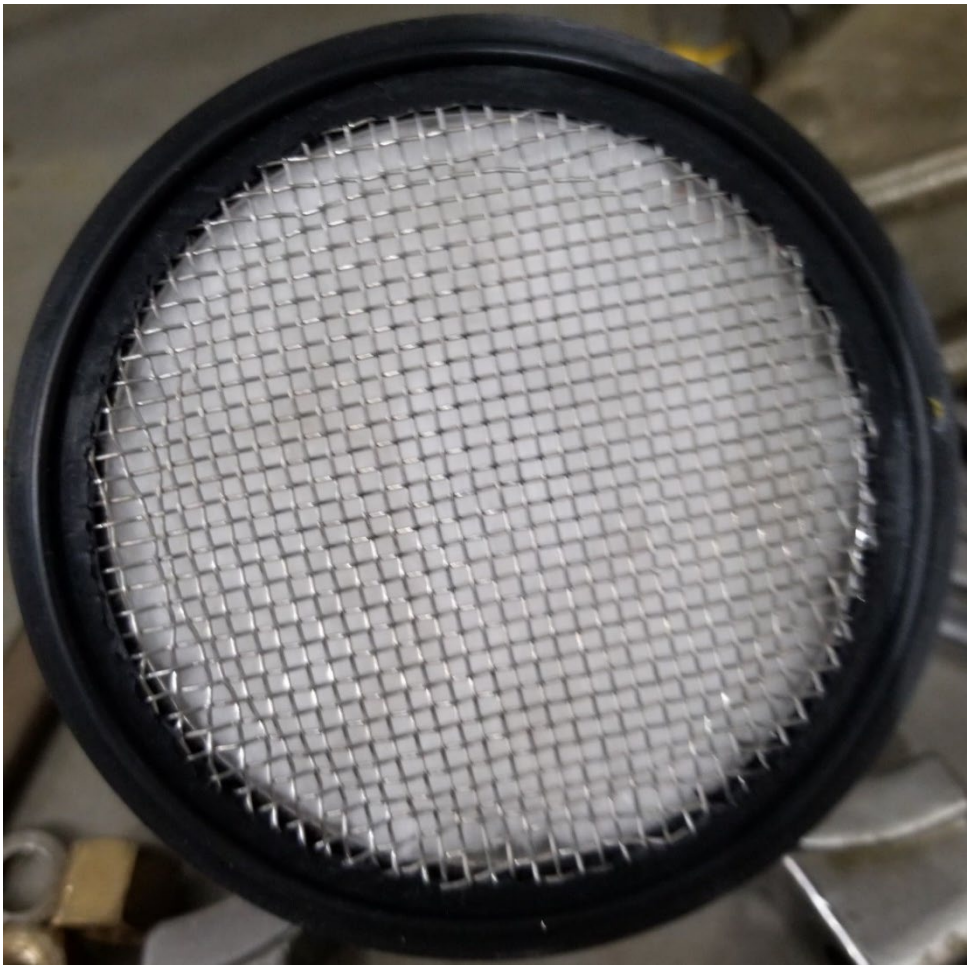

Figure 5: Strong Screen Gasket: Supports solid mass above filter packing …to keep weight/pressure of adsorbent media or biomass from compressing fiber, and to hold packing in place, in case of backpressure event.

Alternative: A sintered disc segment may be used in place of this screen as long as the sintered disc is welded just inside the end of the tube, flush with the flange.

Note: The screen or sintered disc here must be firmly held in place, and as close to the top of the fiber medium as possible.