

TECHNICAL BRIEF

RECOVERY OF UNFILTERED PRODUCT FROM CUNO ZETA PLUS® FILTER HOUSINGS

INTRODUCTION:

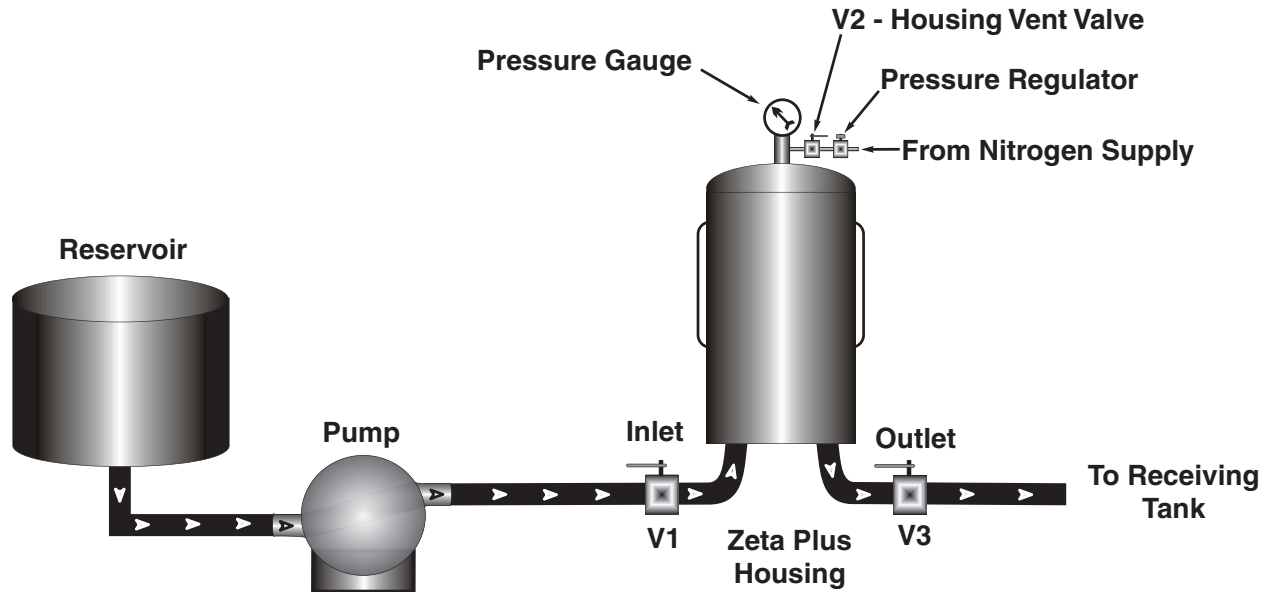
At the end of a filtration cycle, there can sometimes be a relatively small volume of unfiltered product remaining in the Zeta Plus filter housing, contained within the dome of the housing, between the housing inlet valve and the upstream surface of the Zeta Plus filter cartridges. In instances where this product is considered valuable enough to recover, CUNO recommends the following steps to gently pass the remaining volume through the Zeta Plus filter media.

PROCEDURE:

1. When the tank or line supplying the filter housing begins to run dry, close the inlet valve (V1 in diagram on reverse) to the filter housing and stop the pump. The housing inlet valve should be located as close to the filter housing as practical to limit the amount of fluid between it and the bottom of the filter housing. The housing outlet valve (V3) should remain open.
2. Using a regulated N₂ supply, apply sufficient pressure to the housing dome, via the top housing bleed valve (V2), to slowly filter the remaining liquid in the filter housing itself. Assuming that the filtrate receiving tank inlet is at the same elevation as the CUNO filter housing outlet, apply just enough gas pressure (2 - 5 psig) to the housing dome to achieve a modest, but not a high, rate of filtrate flow. (It is important to avoid too great a gas flow rate, or allowing the pump to run dry and push air through the filter, as this will dry a section of the media. This, in turn, will allow the pressure to preferentially dissipate through the filter media *without* pushing any fluid through the filter, thereby preventing any recovery of fluid by this method.) If the filters are partially plugged, as indicated by 5-20 psi across the filter, the gas pressure required to push remaining fluid through the filter will be additive to this differential pressure. For example, in the course of filtration, the filter builds a differential pressure of 15 psid, as it removes contaminants from the fluid. At the end of the filtration run, the user must apply 17 to 20 psig of gas pressure through V2 (15 psid +2 to 5 psig) in order to push any remaining fluid through the filter.
3. Proceed collecting filtrate (which may be a mix of gas and filtrate) until reaching a point of diminishing returns, which could be either a very low liquid flow rate, or time limit reached (30 - 60 min).
4. Once the desired volume of fluid has been recovered, depressurize the filter housing by disconnecting the N₂ supply line and opening the bleed valve.

[OVER]

Note: In applications where the value of the remaining upstream fluid is very significant, a specialized CUNO filter housing system can be employed. This filter housing system (detailed in report A04301079) can reduce unfiltered product hold-up to as low as 250 ml. For additional information regarding this system, please contact CUNO Scientific Applications Support Services (SASS).



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