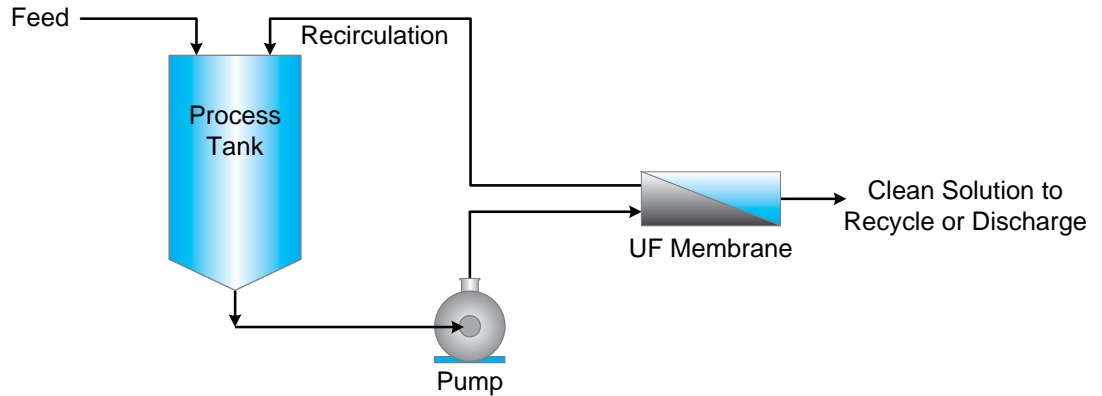


Recycle parts  
cleaning solutions  
and save money using  
membrane based  
treatment system

## Continuous Batch Ultrafiltration



### Background:

Alkaline cleaners have become the method of choice for parts cleaning and degreasing as government legislation bans CFCs and other solvent based cleaners. While oil and grease are readily "lifted" from parts by this new generation of cleaners, cleaning quality can deteriorate rapidly as contaminants accumulate in the washer sump. In addition, large volumes of wastewater are created when cleaners are not recycled, resulting in considerable hauling costs and/or labor intensive in-house chemical and physical treatments.

### Solution:

AVANTech provides complete treatment solutions that can be easily and cost effectively integrated into customer facilities. As a barrier technology, UF membranes offer a simple and reliable approach for solving most oily wastewater problems. Submicronic pores are sized to pass water while contaminants are returned to a process tank. Periodically concentrated contaminants are discharged from the process feed tank on a batch basis, thus the name "Continuous Batch". The UF membranes are designed to allow caustic and surfactant molecules to pass through the membrane while retaining the contaminants that may degrade the rinse water quality. This allows up to 90% savings on chemical usage.

The basic design of a cross-flow membrane system is shown on the diagram above. A pump circulates wastewater at high velocity tangential to the surface of the membrane. This rapid flow sweeps the debris off the

surface of the membrane affording long-term operation. Over time, the wastewater in the process tank is concentrated and emptied, and the system is washed with detergent solution. Optional coalescing media and solids removal capabilities can be added to the process tank to increase recovery and minimize wastewater discharge and downtime.

Since membrane filtration is based on relatively simple mechanical principles, it eliminates the variability often associated with other wastewater processing technically such as chemical treatment. By using a properly designed membrane and treatment system, the user has the assurance that only the desired molecules will pass through the membrane barrier, even during feed stream upsets containing high oil and dirt levels.