



LEVITRONIX®  
PUMP SYSTEMS

# ULTRAPURE AND SAFE PUMPS FOR BULK CHEMICAL DELIVERY

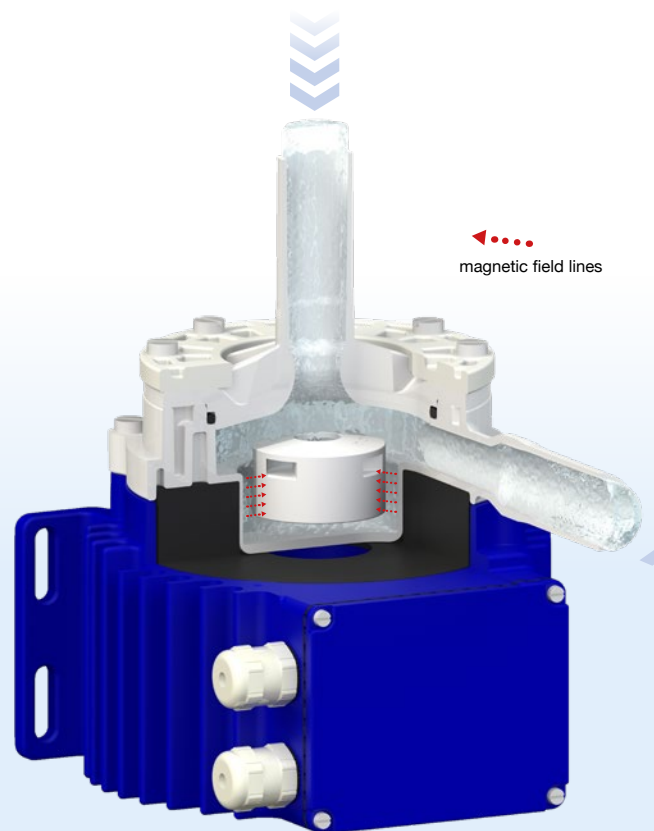


# THE IDEAL PUMP IN CHEMICAL DELIVERY SYSTEMS

Managing process integrity starts with the liquids that come in direct contact with the wafer. With ever-increasing miniaturization, the requirements for the purity of bulk chemicals as well as their supply systems are dramatic.

Compared to pumps, pressurized vessels bear a water hammer risk that can cause particle release from filters and safety concerns. Among all pump systems for semiconductor manufacturing, Levitronix® pumps have become the industry standard for ultrapure wet applications as the absence of a mechanical bearing leads to virtually no particle generation.

Levitronix® pump systems are designed for demanding bulk chemical delivery applications where ultrapure and safe processing will ensure the highest yield.



*The magnetic levitation allows high rpm resulting in continuous, large flows.*

# ADVANTAGES OF A LEVITRONIX® PUMP SYSTEM

## The Purest Pump // ultra low particle generation

Levitronix® pump systems are based on active magnetic levitation. There is no mechanical coupling between the impeller and the pump head casing, which leads to wear-free operation and, therefore, virtually no particle generation.

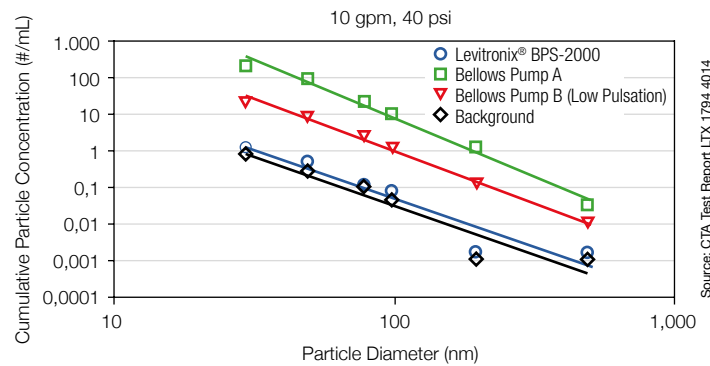
## Safest Processing // no water hammer

In comparison to pumps, pressurized vessels are installed in a dead-headed system, which bears the risk of a water hammer. A water hammer can cause particle release from filters and safety concerns due to large hydraulic shocks. Levitronix® pumps allow for installation in a recirculation loop, which improves filter performance and maximizes safety.

## Increased Purification // multiple filter cycles

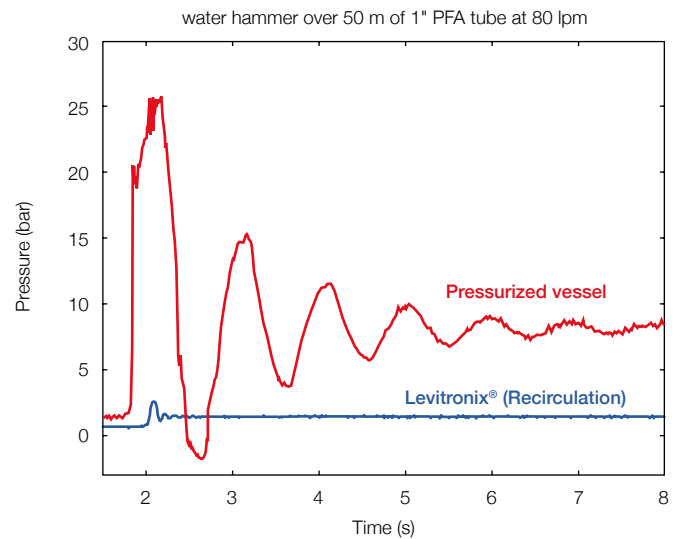
Installation of a Levitronix® pump in a recirculation system allows for multiple cycles through the filter and, therefore, increased purification. In comparison, in single filtration steps, as in pressurized vessel systems, a large part of contamination remains in the liquid.

## PARTICLE SHEDDING OF A LEVITRONIX® PUMP COMPARED TO TWO BELLOWS PUMPS

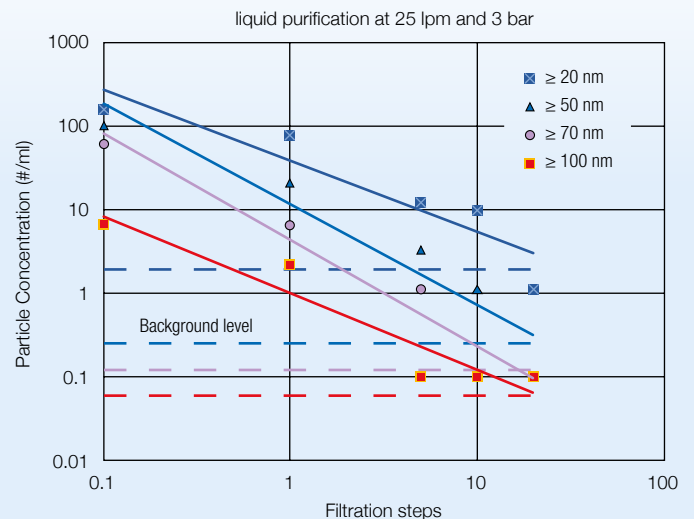


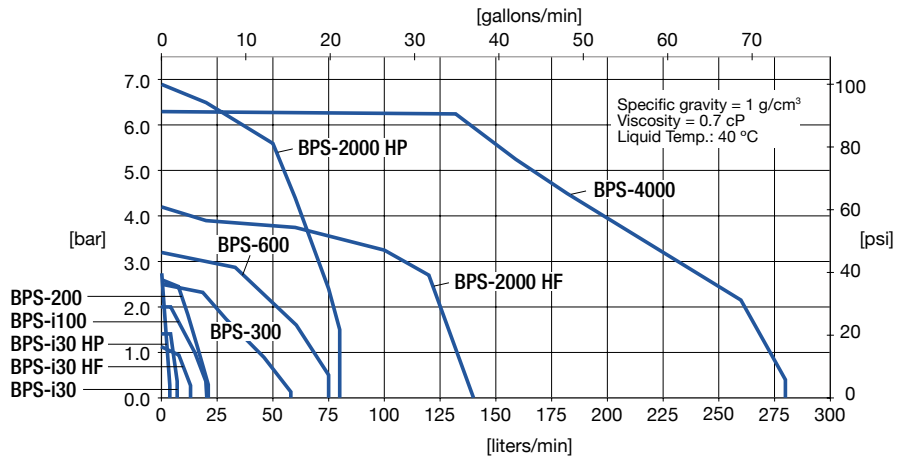
Source: CTA Test Report LTX 1794 4014  
 «Pump Particle Shedding Comparison»  
 Gary Van Schooneveld, October 2019

## COMPARISON BETWEEN A LEVITRONIX® AND A PRESSURIZED VESSEL SETUP



## PARTICLE CONCENTRATION AFTER MULTIPLE FILTRATIONS IN A LEVITRONIX® RECIRCULATION SETUP





## Overview // SU Pump Systems



**BPS-i30 Standard**  
1.5 bar (22 psi)  
7.4 l/min (2 gpm)

**BPS-i30 High Pressure**  
2.8 bar (40 psi)  
3.8 l/min (1 gpm)

**BPS-i30 High Flow**  
1.1 bar (16 psi)  
14.7 l/min (3.9 gpm)



**BPS-i100**  
2 bar (29 psi)  
20 l/min (5.3 gpm)



**BPS-200**  
2.6 bar (37.7 psi)  
21 l/min (5.5 gpm)



**BPS-300**  
2.5 bar (36.2 psi)  
58 l/min (15.3 gpm)



**BPS-600**  
3.2 bar (46 psi)  
75 l/min (20 gpm)



**BPS-2000 High Pressure**  
6.9 bar (100 psi)  
80 l/min (21 gpm)



**BPS-2000 High Flow**  
4.2 bar (61 psi)  
140 l/min (37 gpm)



**BPS-4000**  
6.3 bar (91 psi)  
280 l/min (74 gpm)



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