

Introduction

In the semiconductor industry high purity pumps are used for transferring chemicals. The chemicals are transferred from supply tanks to tank trucks, tank cars, portable tanks or process tanks.

One of the main limiting factors is the maximum flow rate of the transfer pumps. As bearingless centrifugal pumps, Levitronix pumps can achieve a much higher flow rate than conventional diaphragm or bellow pumps, while ensuring the highest purity and keeping a compact footprint. With a Levitronix pump the required transfer time can be reduced dramatically.

Fast Tank Truck Loading

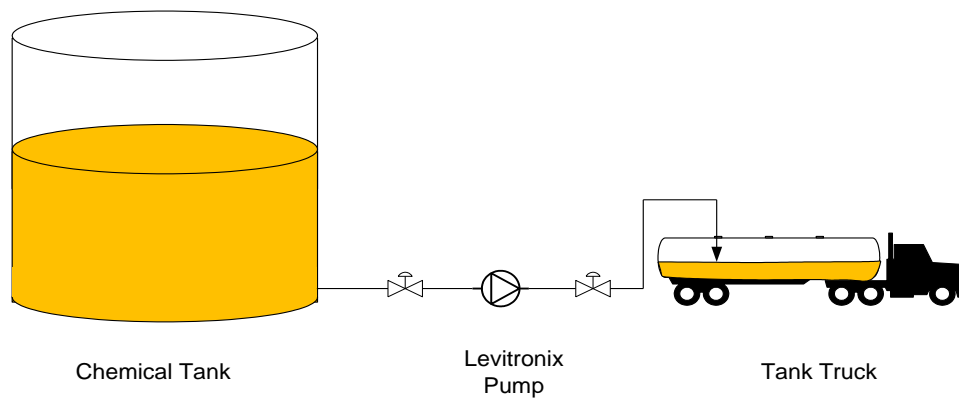


Figure 1: Schematic of Tank Truck Loading

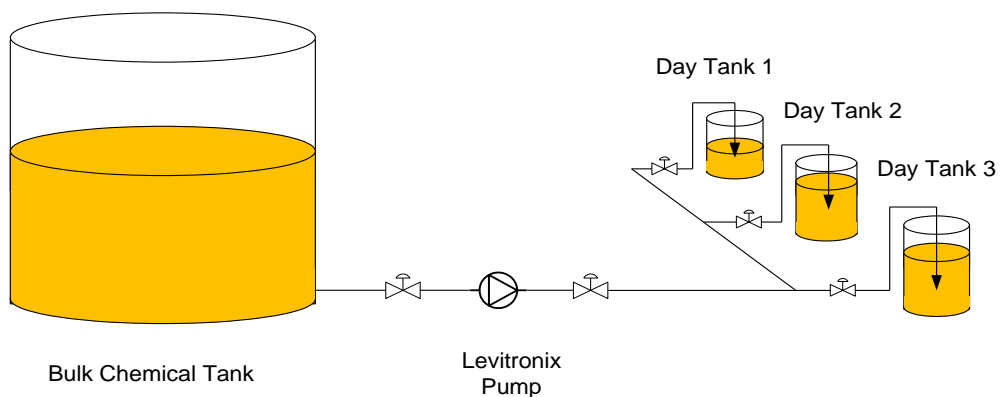


Figure 2: Schematic of Chemical Transfer from Bulk Chemical Tank to Day Tank

Advantages

- **Faster tank truck and tank car loading**
- **Faster liquid transfer from bulk chemical tank to day tank**
- **Particle free chemical transfer**
- **Pulsation free flow rate independent of flow rate or changes in viscosity, density and temperature of chemicals used**
- **Completely dry running able because rotating impeller is levitated in air**
- **Quieter operation than conventional volumetric pumps**
- **Better transportability thanks to compact pump footprint (high pumping power concentration)**

Levitronix Pump Overview

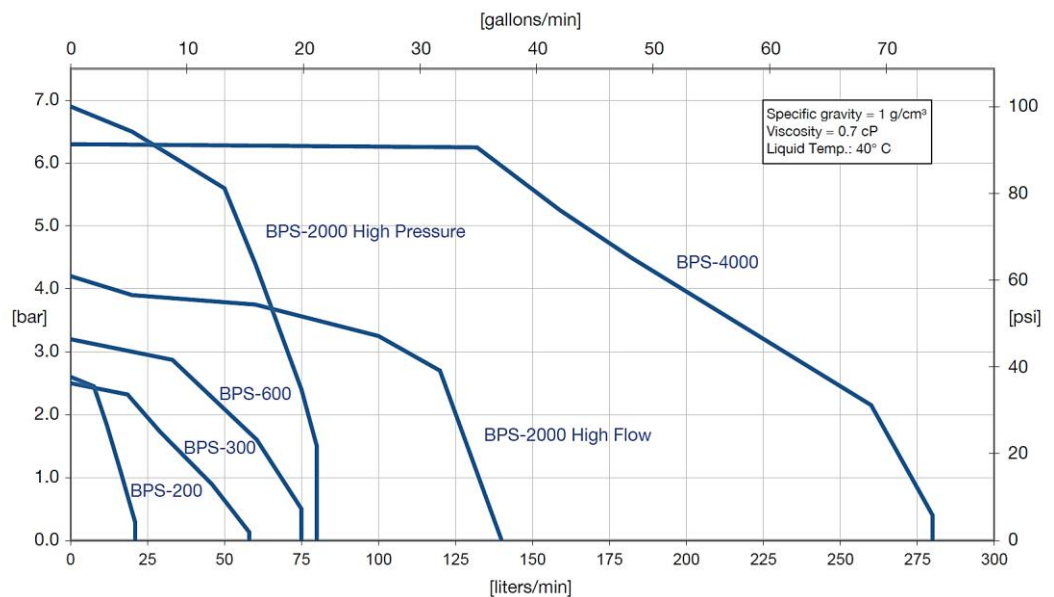


Figure 3: Overview of Levitronix BPS-Family

Example of Loading Time with pneumatic pumps

A typical tank truck filling sequence has the following parameters:

Flow rate of diaphragm pump	50l/min
Volume of Tank Truck	15'000Liter

With **conventional high purity diaphragm** or **bellow pumps** the loading time is around:

$$15'000\text{Liter} / 50\text{l/min} = 300 \text{ min}$$

Reduced Loading Time with Levitronix Pump

The Levitronix pumps offer higher flow rates than conventional high purity diaphragm or bellow pumps. The **Levitronix pump** delivers up to 280l/min and achieves a loading time of:

$$15'000\text{Liter} / 280\text{l/min} = 53.6 \text{ min}$$

With the Levitronix pumps the filling time can be reduced up to 5x times.

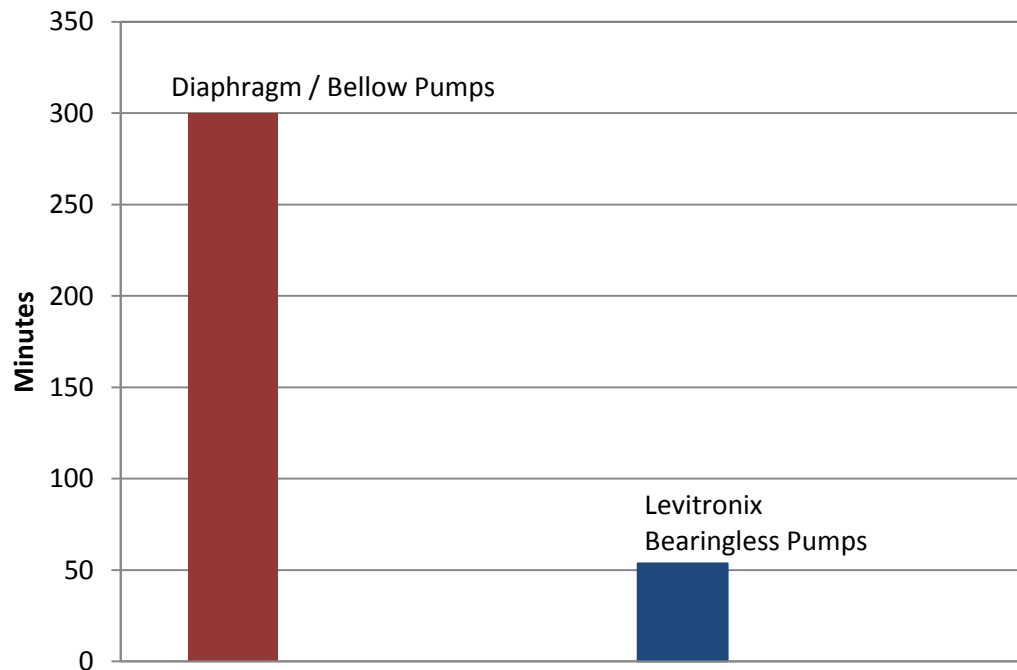


Figure 4: Comparison of typical tank truck filling time

Technical Support

For troubleshooting, support and detailed technical information contact *Levitronix® Technical Service Department*.

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