Turning a batch process into a continuous one

Why stop if you don't have to?!

Adding special additives to a chemical production process requires an accurate and reliable dosing installation. So Suurmond developed the suurDOS® for this. This is a complete system that offered a solution to a customer from the chemical industry to counter both any leaks that occurred and the disadvantages of the batch dosing process.

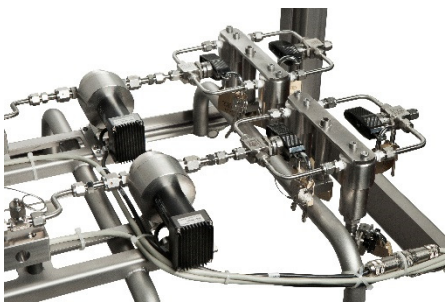
Combining and mixing different substances together is a common thing in the chemical industry. In order to make sure that the processes involved take place safely and efficiently, the correct dosing of the substances, at the right moment and in the right quantity, is very important.

Batch process and leaks

One of our customers that is active in the chemical sector was faced with several problems concerning its dosing processes. To dose additives into a production process, the company employed a piston pump with a reservoir; a system that can be compared to a large syringe that is slowly emptied: i.e. batch dosing. Although this system was perfectly accurate, the piston seal was often found to be leaking. And dosing by means of a batch process also required the production process to be stopped frequently in order to refill the reservoir. This was simply an impractical situation.

suurDOS®

To resolve these problems, Suurmond supplied two suurDOS® systems. This solution – whose name is a combination of 'Suurmond' and 'dosing' – is a complete dosing system consisting of a suction connection, a duplex filter system (one filter working and one stand-by), a chemically inert rotary positive displacement pump (a type mzr-6355 HNPM micro gear pump), and a mass flow meter. All the components are integrated into a complete unit that is quick and efficient to install. To ensure optimum process reliability, this customer's suurDOS® systems have full redundancy built in.



HNP-M micro pumps with drive and HNP-M filters

suurDOS® with protective screens for optimal safety and protection from pollution

The magnetic coupling of the micro gear pumps (hermetically sealed; free from leaks) rules out the possibility of leaks at the seal.
The use of a positive displacement pump has enabled additives to be added as part of a continuous process.

Rotary positive displacement pump / mzr-6355 HNPM
micro gear pump type

Flow rate	: 0.024 – 144 ml/min
Minimum dosing volume	: 15 µl
Positive displacement volume	: 24 µl
Maximum system pressure	: 80 bar
Operating temperature	: -5 °C to 60 °C (optionally -20 °C to 150°C)
Viscosity	: 0.3 – 1,000 mPas
Motor	: 44 W DC servomotor with a micro controller
Interface	: 0 – 10 V, 0 (4) – 20 mA, RS232, one digital input/ output. Optional: CAN bus
Dimensions	: 146 x 70 x 72 mm