Trantec
Solids Handling Limited

Micro powder dosing
Made easy…….

Powder Metering at ultra-low levels

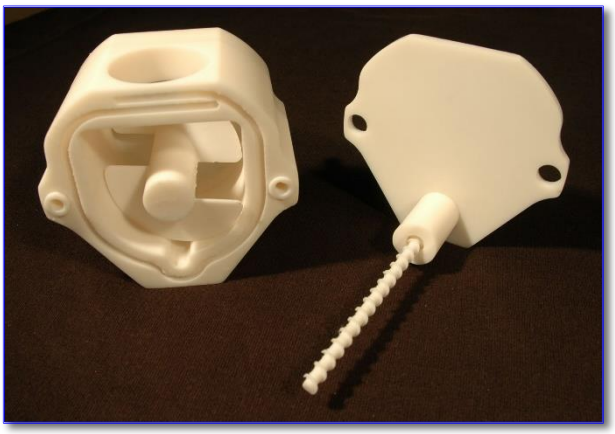
Bulk Solids dosing equipment for feed rates above one kilogram per hour are readily available. A few companies can offer flow or batch rates below 50 grams per hour however, for applications requiring true micro dosing at quantities below this, the equipment becomes difficult if not impossible to obtain.

Trantec have been developing a micro dosing screw feeder capable of extremely low feed rates and unrivalled accuracy. Combining Trantec's modern, in-house computer-controlled machine tools with their twenty plus years of experience producing Powder Metering Feeders, the "Nano" Feeder has gone from concept to working prototype in record time. Accurate feed rates below 5 grams per hour are now achievable.

In-keeping with Trantec's policy of continual development, the Nano Feeder is currently undergoing refinement and intensive product testing to iron out any manufacturing issues and improve production times, an important factor to keep the Nano Feeder competitively priced.

Micro batch dosing presents numerous challenges which are simply not present on larger machines. The miniaturisation of the Nano Feeder's components demands new techniques of manufacture and even tighter tolerances than usual. Careful design and experimentation have enabled us to create robust parts which can tolerate repeated handling in an industrial or laboratory environment.

From the initial machine concept, Trantec utilised 3D modelling and high-resolution 3D printing to produce concept components. The 3D printed parts were assembled into a working prototype which allowed actual material trials on feed rates and accuracy.



Once proven, the design was further enhanced to the highest specification required by the Bulk Solids industry by introducing pharmaceutical standards to the build quality. Metal detectable blue silicone gaskets, PTFE dry running shaft seals, dismantling without tools for easy cleaning and autoclave compatible components are now available as optional features.

A typical Nano Feeder comprises a conditioning chamber within the feeder body, complete with variable speed rotating agitator and variable speed rotating Auger, which provide constant or intermittent feeding to suit the application requirements. The agitator manipulates the product to a uniform density to ensure consistent loading of the auger. The agitator employs highly efficient contra rotating blades to break 'bridges' and 'rat holes' using technology borrowed from ribbon blade mixers. The product is then administered into an auger screw, which can be rotated at variable speeds, ensuring accurate metering at a constant volume of 1% to 2% typically.

Modular in design, Trantec's Nano-feeders offer easy access to all parts for optimum cleaning and maintenance. Our exclusive design ensures that wastage of expensive materials is kept to a minimum, with very little residue being left in the feeder.

Complimenting the Nano Feeder's mechanical capabilities, Trantec offer weigh control systems for both loss in weight and gain in weight applications including Gravimetric type continual weight loss monitoring and correction. Nano Feeders can be mounted on a dedicated weigh unit which offers even greater accuracy and control.

Selection of the correct Nano Feeder configuration is essential for achieving optimum performance and accuracy. The nature and characteristics of the product is an important factor when choosing the size of the Auger Screw and configuration of the agitator.

Trantec offer a free, comprehensive product testing service to all our clients. Upon completion of testing, we will provide you with a report, detailing our findings and our recommendations for trouble-free feeding.

Alternatively, customers can witness material trials first-hand or request a video with your report.

For more information Tel: 01282 777566 **or send your enquiry to** sales@trantec.info.