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Project Note

Flexible Powder Dosing

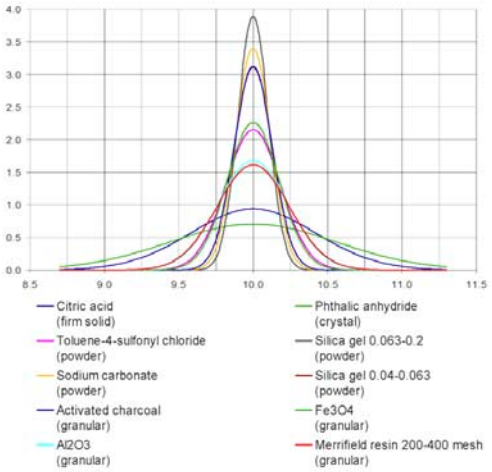
This system for solid dosing provides small amounts (down to 0.1 mg) of powder. The product set new standards in the industry, being independent of place and of the receptive container by weighing the dispenser.

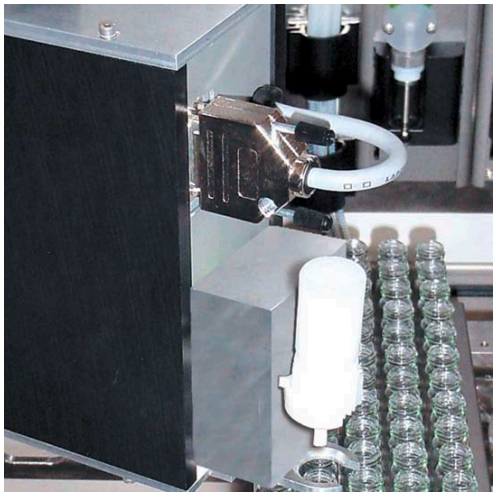
Task

Chemspeed wanted to develop a dosing technology and dosing processes that would set new standards in the industry. The task was to create a dosing system for the ultra-precise yet flexible dosing of powder from containers within a defined working area. The technical solution was to be installed as a solid dosing unit (SDU) on a flexible handling station being developed in a parallel project: dual dosing station.

Implementation

The development process was divided into four steps. Step one involved analysing the requirements and conducting a feasibility study together with the customer. Designs for a mobile powder dosing system were worked out and evaluated. Based on this study, a functional model was developed and built as step two. This model was capable of dosing a wide variety of powders and performed superbly in terms of dosing accuracy and reproducibility. The feasibility of the project was confirmed in practical tests. Once it was clear that technical risks were under control, it was time to proceed to step three: prototype development. The aim here was to develop an SDU for use on the latest Chemspeed platform, the dual dosing sta-tion. Now it was possible to position the SDU with the robot like a dosing tool. Even when the unit was linked to the robot, the dosing performance was excellent and exceeded the results achieved with the functional model. The final step involved preparing the SDU for series production. The focus at this stage was on cost reduction and on additional functionality for handling critical powders.





Customer benefits

- Innovation: Chemspeed patented the SDU and maintained its lead in the marketplace
- Uniqueness: First technical dosing system featuring mobile operation
- Applicability: Special extruders suitable for critical powders
- Quality: Std down to 100mg can be achieved (see diagram)
- Speed: Fast dosing times: 20s for 10mg
- Development time: Feasibility: 10 weeks; functional model: 8 weeks; prototype: 4 months

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