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## **Semi-automated dosing system for more quality assurance**

September 2019: Small quantities in production require manual work. Precision filling with microliter accuracy, fast cycle times and effective use of resources sounds like automation. The semi-automated filling and dosing system smartDoS by HNP Mikrosysteme GmbH provides the right combination.

The flexible system smartDoS contains a highly precise dosing pump. This micro annular gear pump (mzr-pump) is controlled via the graphical user interface mzs-Touch Control. Dosing quantity, dosing speed and dosing duration are entered directly. Depending on the medium and the pump series and size, dosing volumes from 0.25 µl are possible. The dosing is carried out with constant precision and thus ensures a constant process quality. An additionally integrated hand or foot switch enables the operator to activate the start signal and thus determine the cycle of the filling process.

Further optional system components are filters, reservoir, shut-off elements and dosing needles. For media with high viscosities, the pumps are additionally equipped with gears. Typical media are oils, greases, silicones, waxes, adhesives, colorants, solvents or additives in process engineering, the pharmaceutical and food industries, the cosmetics industry and mechanical engineering.

smartDoS is modular in design and flexible in application. The continuous delivery of volume flows between 1 µl/min and 1152 ml/min is also possible. Fast media changes, easy emptying and rinsing of the pump as well as system adaptations are simple. Resources such as material and time are used effectively and the quality of small batches is significantly increased.

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### **HNP Mikrosysteme**

HNP Mikrosysteme GmbH, located in Germany, develops, manufactures and markets pumps and systems worldwide which deliver small amounts of liquids fast and accurately. Beside several applications in plant engineering, chemical processing and pharmaceutical processing, mzr-pumps are used in the field of life science and analytical instrumentation.



Flexible dosing system smartDoS  
Picture 1: *hnpm\_smartDoS\_schatten.jpg*



Picture 2: *hnpm\_smartDoS\_EN.jpg*