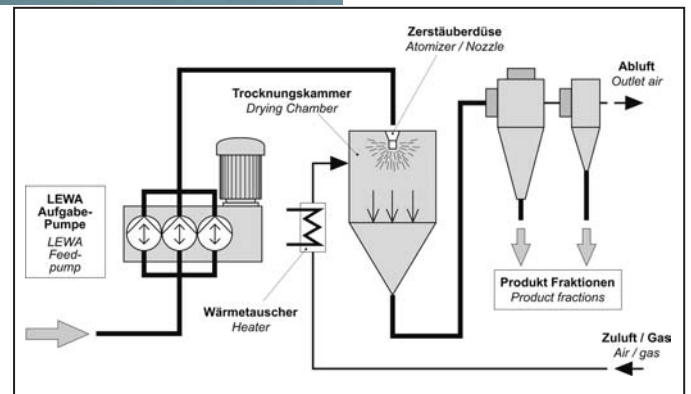


LEWA diaphragm metering pumps for pharmaceutical spray drying



LEWA triplex hygienic diaphragm pump for feeding a spray dryer



Pharmaceutical spray drying

Pharmaceuticals, biotechnological products, food or herbal essences for personal care products and also fine chemicals dry quickly by maximizing the wet feed's surface area. The basic idea of this method of spray drying is the production of highly dispersed powders from a wet feed fluid by evaporating the liquid. A solution or a suspension is sprayed into a hot air or nitrogen stream via nozzles or rotating atomizer discs. Supply to the spray dryer is carried out by suitable pumps.

As drying and formation of particles take place simultaneously in the spraying process the requirements for pharmaceutical requirements increase with the demands made on the biological availability of the pharmaceutical. Because the efficacy of a pharmaceutical depends, among others, on the size of the particle produced: particle size distribution, residual moisture content, bulk density and particle shape. Compliance to exactly consistent quality standards are basic customer requirements. In order to meet these product requirements the liquid feed must be accurate, continuous, safe and pulsation-free. Here the advantages of LEWA pumps were demonstrated in some projects already.

Especially LEWA diaphragm metering pumps of the hygienic and sanitary series in triplex design are predestined for these demanding tasks in the GMP range.

Aqueous solutions and suspensions as well as compounds based on organic solvents such as ethanol, isopropanol, acetone or methylene chloride can be metered reliably and safely into the spray drying process. Filling-, binding-, decomposition- and slip agents can so be transferred, dissolved or suspended, together with the active substance into defined, dried, free-flowing, uniform particles.

LEWA diaphragm metering pumps are proven solutions and optionally include:

- Supply to spray drying nozzles at constant pressure due to pressure stiff pump characteristics
- Especially suitable for suspensions
- Hazardous area protection, ATEX compliant
- Gentle conveyance, no high shear forces by rotating equipment
- High safety due to 4-layer sandwich diaphragm with diaphragm rupture monitoring and signalling without contamination of product
- Low hold-up volume in the pump head due to design with minimized dead space
- Hygienic design, specially designed for and together with the pharmaceutical industry
- Hermetically tight, no contaminations from outside to inside and the other way round
- Cleanable design, easy accessibility for maintenance purposes
- CIP, SIP, DIP
- Material 1.4435 (AISI 316L) with surface roughness $Ra < 0,5 \mu m$
- According to ASME BPE
- Clean operation – no particle abrasion of the LEWA pump, inert and FDA compliant construction materials
- Extensive documentation for qualification
- FAT, SAT and worldwide service

LEWA hygienic pumps provide an extension of our reliable standard product lines, well-known worldwide for the following features:

- Safe
- Reliable
- Economical



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LEWA is a member of the leading boards for hygienic construction of pumps and packages

