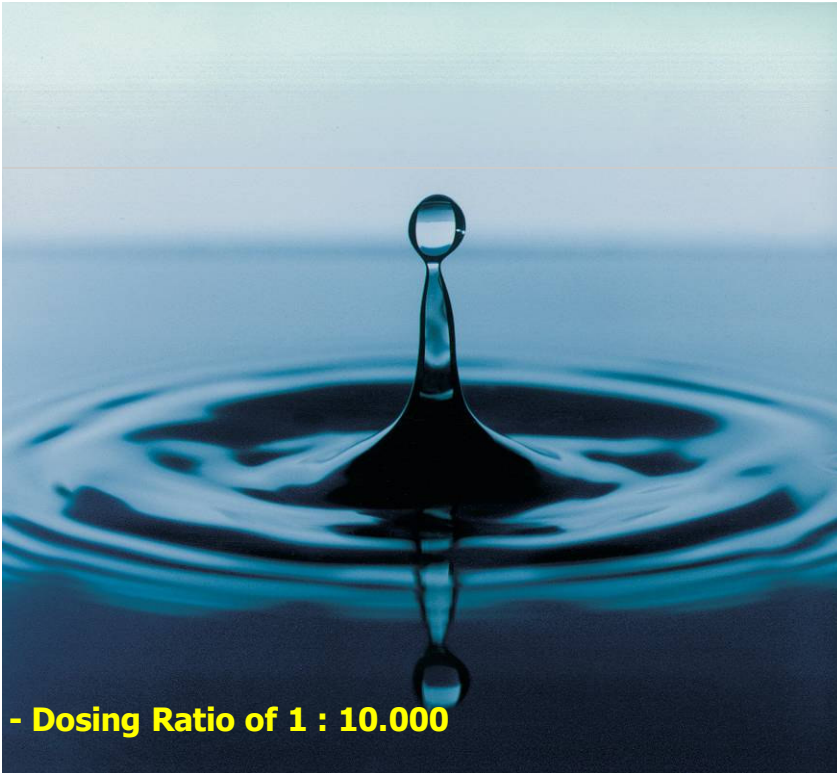


SupraMix - Dosing , Mixing, Foaming

SupraMix - Principle, Technology and Components



- Dosing Ratio of 1 : 10.000

Dosing and mixing of various products is a daily job in the industry.

Most of the automatic dosing and mixing units have a limited range set by the size and type of dosing pumps. - Any change in range requires either a new system or major modification of the pump- and drive system.

Another problem is a full continuous mode of operation: - several pumps can only operate in a 'pulse' mode or must run at a certain speed.



Pump with two pumpheads installed

Peristaltic dosing pumps:

To keep cost low Zimmer developed a special combination of stepping motor driven peristaltic pumps. With this combination it is possible to reach a dosing range per setting of about 1:100 within +/- 2% accuracy.

Variable speed of 3-300 rpm and 7 different tube sizes can generate a flow of 2 micro-liter - 2 liter/min. with one type of pump and control system.

- There is no contamination of the pump or fluid
- Ideal for slurries, viscous, shear-sensitive and aggressive fluids
- Easy to install, simple to operate, inexpensive to maintain
- Pump design prevents backflow and siphoning without valves
- Wide range of tubing for all type of chemicals
- Flip-top easy-loading pumphead
- Up to 5 pumpheads flip onto the same shaft to extend the flow rate of the pumps



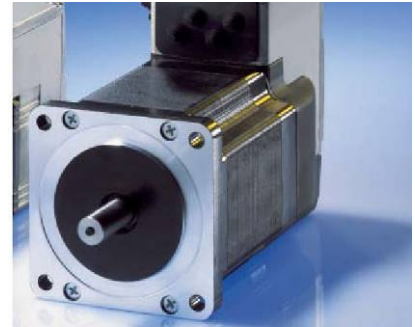
Principle of a peristaltic pump

SupraMix - Dosing , Mixing, Foaming

SupraMix - Principle, Technology and Components

Stepping Motor Drive System:

- Exceptionally robust, maintenance-free drives.
- Step-by-step movements specified by a positioning controller is executed precisely.
- no minimum speed
- one type of drive for all pumps
- built in electronic control
- direct coupled to the pump - no gear

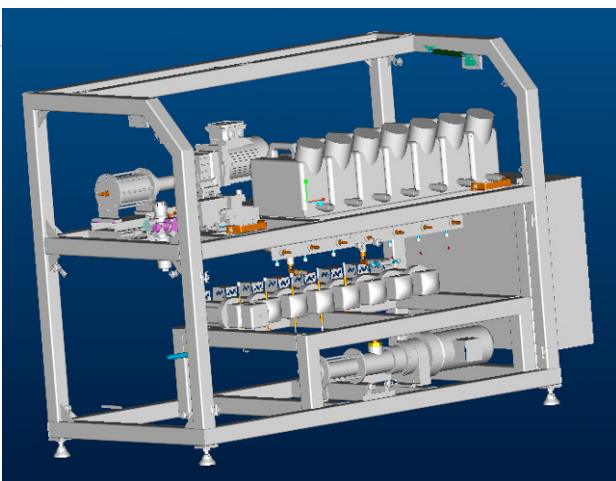
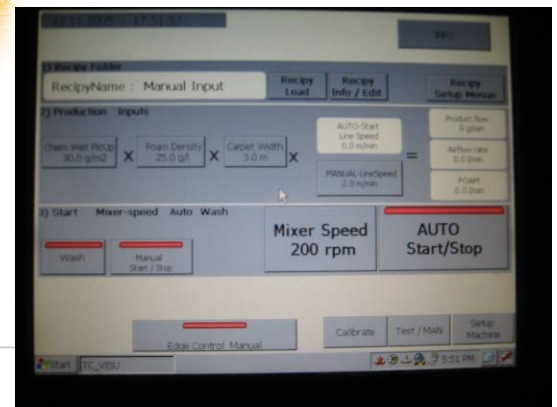


Control System:

The control system is based on a touch terminal with Windows CE. This configuration enables easy and efficient programming and easy adaptation and extension of software and hardware.

The program is based on following modules:

- **Calibration** - each dosing pump is calibrated and adopted to individual specific weights of products
- **Dosing** - in batch- or continuous mode
- **Cleaning** - of pre-mixing tank and in-line mixer
- **Report** - of all stored recipes can be exported and printed out
- **Tracking** - report of total consumption of each individual product over a period of time



The System is built in a very modular way and can be set up according to customers demand:

- **SM-D** - In-line dosing of chemicals
- **SM-DM** - In-line dosing and mixing of up to 8 liquid products
- **SM-DF** - In-line dosing, mixing and foaming
- Mixing and foaming of pre-mixed products

SupraMix - Dosing , Mixing, Foaming

SupraMix Dosing System (SMD)

Dosing of up to 8 products:

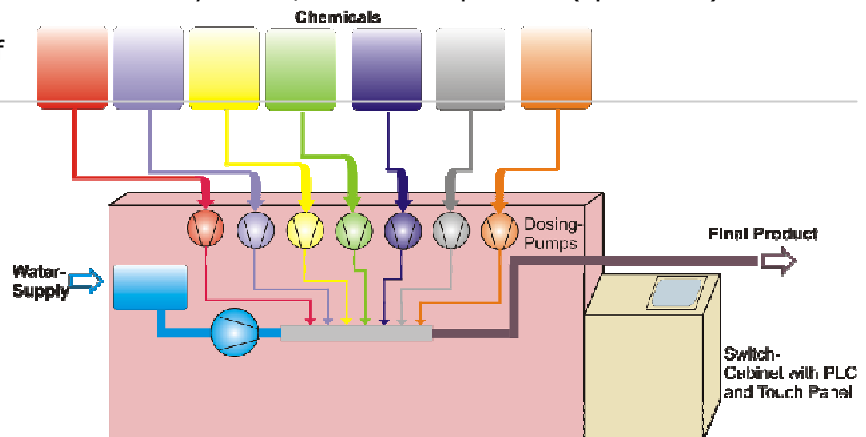
Peristaltic dosing pumps can either run in a batch mode or in a continuous mode.

The products are dosed by individual outlets into any bucket, drum or low pressure (up to 1 bar) flow of water.

- Very efficient and precise way of dosing
- modular system at low cost
- 0,002 g/min - 2000 g/min
- continuous or batch mode
- pumping pressure up to 1 bar

Application:

- dosing of chemicals for the textile, chemical and food industry



Dosing and pre-mixing for any application where the mixture must be pressurized:

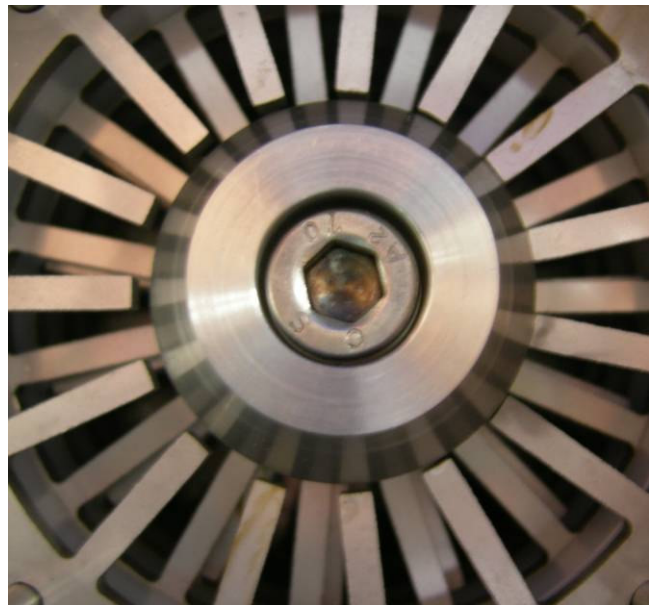
Individual components are dosed into a built-in collecting tank controlled by a level sensor. An internal or external pump is taking the mixture from this collecting tank to pump it either into a foam-mixer or to any other application.

This simple but most effective way makes it possible that the SMD system can be used for any existing mixing system which is working from a mixing tank operated in a batch mode.

- The dosing process is de-coupled from the mixing process
- No electrical connection between the dosing unit and existing mixing systems needed
- 0,002 g/min - 2000 g/min
- pumping pressure up to 6 bar

Application:

- automatization of existing foam mixing systems
- injection of multiple chemicals into streams of water
- automatic dosing of chemicals in color kitchens and dye houses



Foam mixing head with rotor and stator

SupraMix - Dosing , Mixing, Foaming

SupraMix - Dosing and Foaming (SM-DF)

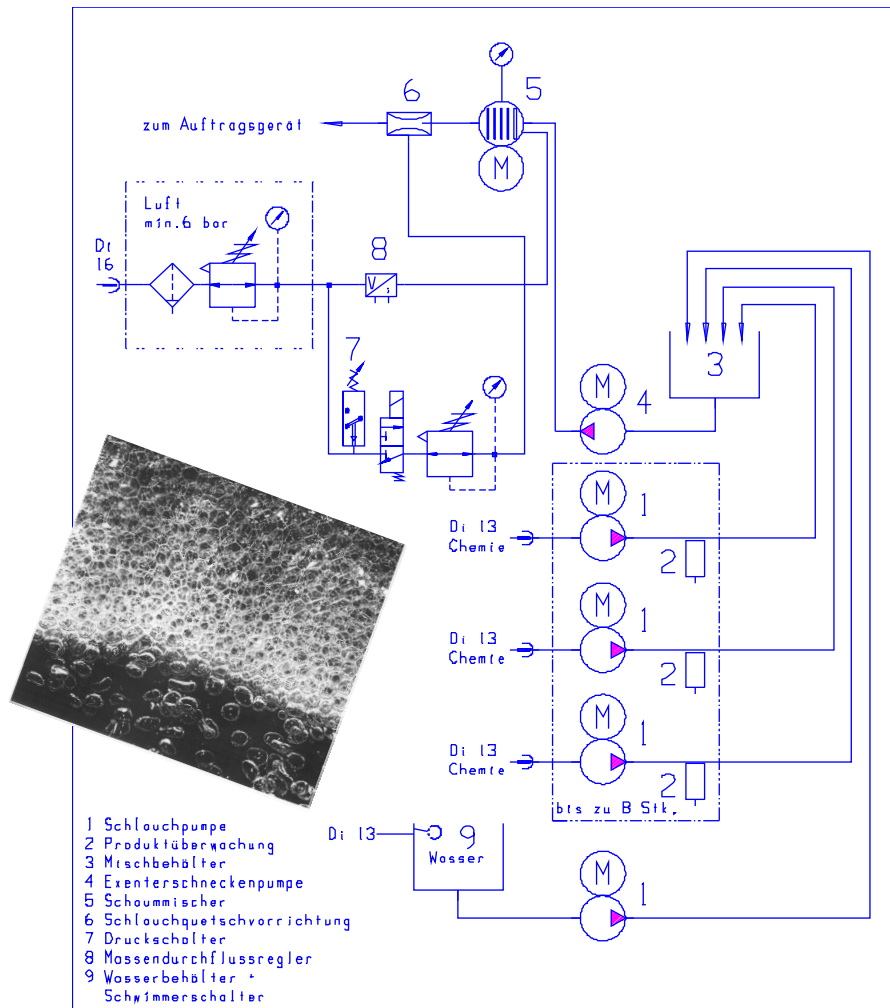
Foam is frequently the basis for first-class products, because it allows for optimized production processes in many sectors.

- optimum penetration
- increase in surface area and volume-
- permeability-
- wearing behavior-
- grip properties, etc.

Accordingly, the quality standard of many modern products has only been feasible thanks to foam technology. Integration of a SM-DF in already existing production lines also offers the user many benefits in next-to-no time:

- cost advantages
- improvements in quality
- savings on materials
- production innovation
- new market chances

One of the unusual features of foam technology is in particular the amazing range of possibilities it offers for completely different applications. This extends from food to non-food, from baked products via milk and confectionery through to high-tech products in the non-food range.



- Modular system (dosing of pre-mixed products or of individual chemicals)
- individual dosing of all chemicals
- supervision of all products
- wide dosing range (1 : 100) of chemicals
- easy access to dosing pumps and mixer
- mixer with simple and effective sealing system and individual removable shearing blades
- Recipe control via touch panel

J. Zimmer Maschinenbau GmbH
Eibergstrasse 2-8
A-6330 Kufstein / A U S T R I A
T: +43 (5372) 6 48 93
F: +43 (5372) 6 14 76
chromojet@zimmer-austria.com
www.zimmer-austria.com