Shearpump and Powder Mixer

Fristam

Homogenizing, Dispersing, Emulsifying and Dissolving

Our new unit enables you to produce multiphase products of consistently high quality, time after time.

The principle is really quite simple.

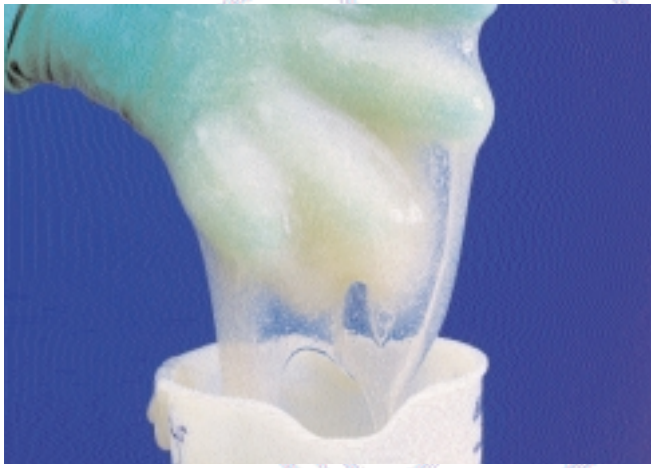
The new, efficient mixing method is based on the proven centrifugal pumps of the Fristam FP range. Instead of the impeller, a rotor/stator system, operating at tip speeds of up to 38 m/s, draws inhomogeneous media through shearing clearances of just 0.3 mm.

Thanks to the extremely high flow rates in the rotor/stator system and the high shear rate of up to 125,000 1/s, a high-perfomance blending of multi-phase products is achieved.

The result: Inseparable emulsions and end products of incomparable homogenity.

The smooth operational performance achieved by this system conforms with the unique precision and quality you have come to expect from all Fristam components.

Since applications vary in type and complexity, we offer customized solutions ranging from the small single unit to large-scale inline installations, as well as expert engineering consultation and support.



Concentrated: With the Shearpump, it is easy to achieve highly concentrated solutions and to process stabilizers to highly viscous materials.

The stator: The media are drawn through shear clearances of 3/10 mm. Disintegrated into the smallest particles, these are blended thoroughly until inseparable.

The right solution for every require

Materials

- Casing, cover and rotor/stator system are cast or forged
- Standard materials used:
  - Cr-Ni-Mo steel 1.4404

  Options:
  - Titanium
  - Hastelloy C
  - Other precision-cast materials
  - Materials with less than 0.5% delta ferrite
- Surfaces in contact with the product:
  - Shotblasted
  - Ground
  - Polished or electropolished
  - Hardened or coated
  - Special surface finish requirements can be met

Drives

- Three-phase induction motors
  - Totally enclosed, IP 55 / IP 56

  Options:
  - Frequency controlled
  - Higher enclosure classes
  - Explosion proof
  - Flameproof enclosure
  - Special voltages and special frequencies
  - Special motors

Special options

- Special rotor/stator systems
- Heating/cooling jacket
- Casing drainage
- Position of discharge connection, 360° variable
- Trolleys

Types of connection

- Threads:
  - DIN 11851, DIN 11864
- Flanges:
  - DIN, ANSI u.a.
- Clamps:
  - Tri-clamp, ISO-clamp
- Special connections possible

The powder mixer: The compact framed unit described here requires very little space to operate fully, even inline, and is easily integrated into existing systems and processes.

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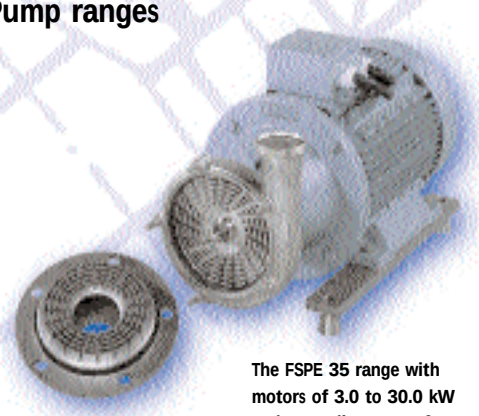
Pump ranges



The FSPE 35 range with motors of 3.0 to 30.0 kW and rotor diameters of 145 to 250 mm are particularly suitable for high viscosities and throughput rates.

The FPM 7 range with motors of 2.2 to 18.5 kW and rotor diameters of 130 to 195 mm is the optimum choice for handling medium viscosities and throughput rates.

Model/Type	Speed	Rotor Ø	Motor size
FSPE 352 / 145	1,450 or 2,900 rpm	145 mm	3.0 kW
FSPE 352 / 145	1,450 or 2,900 rpm	145 mm	4.0 kW
FSPE 352 / 145	1,450 or 2,900 rpm	145 mm	5.5 kW
FSPE 353 / 175	1,450 or 2,900 rpm	175 mm	5.5 kW
FSPE 353 / 175	1,450 or 2,900 rpm	175 mm	7.5 kW
FSPE 353 / 175	1,450 or 2,900 rpm	175 mm	11.0 kW
FSPE 354 / 200	1,450 or 2,900 rpm	200 mm	11.0 kW
FSPE 354 / 200	1,450 or 2,900 rpm	200 mm	15.0 kW
FSPE 354 / 200	1,450 or 2,900 rpm	200 mm	18.5 kW
FSPE 355 / 250	1,450 or 2,900 rpm	250 mm	18.5 kW
FSPE 355 / 250	1,450 or 2,900 rpm	250 mm	22.0 kW
FSPE 355 / 250	1,450 or 2,900 rpm	250 mm	30.0 kW
FPM 712	1,450 or 2,900 rpm	130 mm	2.2 kW
FPM 712	1,450 or 2,900 rpm	130 mm	3.0 kW
FPM 712	1,450 or 2,900 rpm	130 mm	4.0 kW
FPM 722	1,450 or 2,900 rpm	160 mm	4.0 kW
FPM 722	1,450 or 2,900 rpm	160 mm	5.5 kW
FPM 722	1,450 or 2,900 rpm	160 mm	7.5 kW
FPM 742	1,450 or 2,900 rpm	195 mm	5.5 kW
FPM 742	1,450 or 2,900 rpm	195 mm	7.5 kW
FPM 742	1,450 or 2,900 rpm	195 mm	11.0 kW
FPM 742	1,450 or 2,900 rpm	195 mm	15.0 kW
FPM 742	1,450 or 2,900 rpm	195 mm	18.5 kW

Using it pays

Right from the development stage we focus on the profitability of your production.

This is where the saving starts.

Compared with conventional dissolving processes in large tanks or boilers, using the Fristam Shearpump can cut your processing time by up to 90%. The Shearpump disintegrates agglomerates and lumps etc. with its high shear energy, and gives absolutely constant, repeatable results.

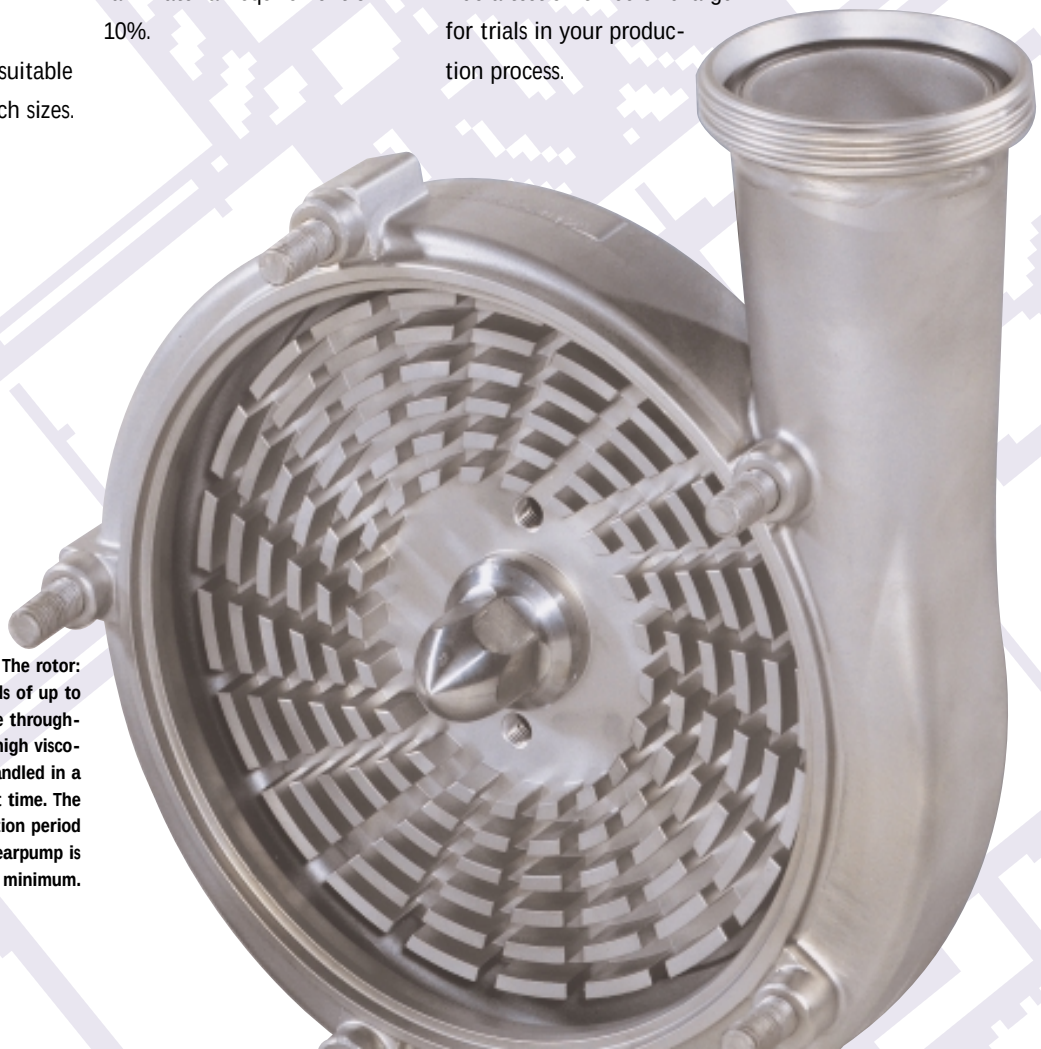
This pump is also highly suitable for handling varying batch sizes.

The forced flow of the products in the Shearpump ensures a continuously high standard of quality.

Depending on the application, you can expect to use fewer raw materials because of the more effective breakdown of constituents: When processing stabilizers, we noted a reduction in the raw material requirement of 10%.

Cleaning – the Shearpump is, like all Fristam pumps, fully CIP-capable. As a rule, you can carry out maintenance yourself since its construction is familiar due to its similarity to the centrifugal pumps.

All in all we are talking here of a very short amortization period. We would be pleased to provide a test unit free of charge for trials in your production process.



The rotor: With tip speeds of up to 38 m/s even large throughput rates and high viscosities can be handled in a very short time. The product retention period in the Shearpump is reduced to a minimum.

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