Fristam Pumps...
Performance You've Come to Expect
Three principles: Quality, Flexibility and Innovation

Fristam was founded in 1868 and purchased in 1909 by the great grandfather of today’s managing director Wolfgang Stamp. At that time, the North German company produced all types of machines for the dairy industry. The first Fristam stainless steel pump was manufactured in 1931 in response to our customers’ requirements. Since then the success of Fristam has been based on three principles: quality, flexibility and innovation.

A leading manufacturer of sanitary stainless steel pumps

Over the generations, Fristam has established itself as the leading manufacturer of high quality sanitary stainless steel pumps. Today, Fristam products can be found in many of the world’s top beverage, brewing, bio-pharmaceutical and food processing companies. With an international network of manufacturing sites, sales offices and distributors, Fristam pumps are in service and respected as a benchmark of quality worldwide.

Fristam has been manufacturing in the U.S. for over 25 years.

Optimum Solutions

Fristam offers solutions precisely matched to your specific application. This approach ensures an optimal pumping, blending, or mixing system you can depend on. This brochure illustrates Fristam’s broad range of products with options and performance features to match your specific application. For more information, including individual performance curves, you may request a specific series brochure or download this information from our web site: www.fristam.com.
**Worldwide commitment to customer satisfaction**

**Fristam’s Commitment**
Fristam Pumps manufactures the sturdiest products in the industry. Our design reduces repair/replacement cost, downtime and energy consumption, and therefore yields high lifetime value. Fristam is one of the most accessible equipment companies in the world. Fristam’s dedication and quality service do not end with your initial purchase. An international network of manufacturing facilities, sales offices and distribution supports Fristam’s commitment to customer satisfaction.

**Mission Statement**
To be the leader in achieving total customer satisfaction by providing the highest value pumps and “whatever-it-takes” customer service.

**Quality, Flexibility and Innovation**
Fristam Pumps’ worldwide resources are committed to your needs. By starting with stringent guidelines for selecting materials and parts through precision machining and finishing, Fristam provides the high quality you have come to expect.

Our manufacturing flexibility meets your application needs by providing the broadest range of models and options, as well as customized solutions for your special applications.

By providing continuous innovation through research and development, Fristam will continue to provide you with the best choice for reliable performances and high lifetime value.
Decades of experience
At Fristam, quality control is continuous. Each part is carefully checked from raw material through final assembly. The result of this effort is a pump, mixer or blender worthy of the valuable product your company produces. Processors know stainless steel guarantees the most sanitary conditions – this is a Fristam standard. Its extraordinary strength makes stainless steel the ideal material for all rotating and stationary machine parts. Fristam pumps’ solid design ensures operational reliability, low noise and continued performance during sudden changes in pressure even at very high discharge pressures. Fristam’s blending and mixing products are built on our pump experience.

Fristam complies with and supports regulatory standards. Fristam products meet all applicable industry standards for performance, cleanliness and design. As a registered ISO 9001:2000 company, Fristam is committed to consistent quality products.

Reliable and easy to maintain
The close tolerances found in Fristam pumps contribute to their long service life. Features such as heavy cast construction and innovative seal design assure reduced maintenance cost, yielding high lifetime value. Even on demanding vacuum withdrawal applications the typical life of a Fristam seal is over one year. In the long term, a Fristam product will always be the most cost effective solution for your company.
Customized solutions
Fristam is also noted for developing innovative custom modifications to meet your individual needs. Tight production tolerances and continued product improvements are routine at Fristam. We offer a customized solution for your specific application. Our quick delivery and excellent service are second to none. In order to continue offering innovative solutions, Fristam invests significantly in the development and research of new technologies for stainless steel pumps and blending/mixing products.

Gentle handling of sensitive products
Fristam products provide gentle handling of large particulates, shear sensitive and critical products. As demonstrated in actual pumping trials and systems, our sophisticated designs significantly reduce product damage when compared with other brands. Users have found Fristam pumps excel at pumping cherries, shrimp, cream, yogurt, yeast slurries, whole blood, bio-pharmaceutical solutions and other sensitive products.
FPR Series Centrifugal Pumps

Fristam’s FPR Series sanitary centrifugal pump, designed for easy maintenance and less parts inventory, exceeds the standard established with our high performance centrifugal and positive displacement pumps.

FPR Series centrifugal pumps reduce maintenance time and effort. Designed with a front pullout seal, the FPR allows production personnel to service the pump in place—processors no longer need to pull pumps out of line to change seals. Additionally, no special tools are required to service FPR pumps. FPR pumps have fewer parts, so processors have less maintenance parts to stock. Two seal sizes fit the entire FPR line (except model 4001). The 757 seal fits models 700-354, the 758 seal fits models 345-1161. Compared to other centrifugal pump series, the FPR requires half the number of shafts due to the standard seal design.
Fully CIP’able, the FPR’s design meets the most stringent sanitary standards. Its fully balanced internal seal performs at virtually any pressure. An optional stainless steel flange provides corrosion resistance.

14 pump heads
26 models (low and high speeds)
For product viscosities up to 1,200 cps
Manufactured in the U.S.A.

Optional Features for the FPR:
Stainless Steel Flange
Jacketed Pump Housings
FP Series Centrifugal Pumps

This versatile heavy-duty pump is the cornerstone of the Fristam line. For vacuum withdrawal from evaporators, viscous, hot or abrasive products and many other applications, the Fristam FP Series is the benchmark for the sanitary processing industry. The FP Series is often an alternative for applications that have typically required positive displacement pumps. Their close tolerances and superior impeller design allow Fristam FP's to successfully pump cream, eggs and cell cultures. Fristam’s internal seal uses the cooling and lubrication of the product to provide longer seal life. The Fristam design also maintains constant pressure between the seal faces to prevent potential contamination.

The FP Series is capable of handling product viscosities up to 1,200 cps Newtonian and some thixotropic applications with apparent viscosities up to 8,000 cps. (Please consult with Fristam for these applications.) A complete line of options is available on the FP ranging from special gasketing and connections to bearing block mounting. In addition, there are a number of specialty FP pumps available for your application.

13 pump heads
26 models (low and high speeds)
For product viscosities up to 1,200 cps
Manufactured in the U.S.A.
FPX Series Centrifugal Pumps

The FPX features the same high performance pump head as the FP. The FPX is the pump of choice for most conventional applications. Superior value results from its mounting style and the use of a single internal seal only.

13 pump heads
26 models (low and high speeds)
For product viscosities up to 1,200 cps
Manufactured in the U.S.A.

Features for the FP and FPX:
- Gentle product handling
- Decreased energy costs
- Low maintenance costs
- Reduced downtime
- Four seal sizes for all FP and FPX models
- Capable of product temperatures up to 400°F

Optional Features for the FP and FPX:
- Aseptic configuration
- Jacketed housings for most models

![FP and FPX 1750 RPM Composite Curves](image1)

![FP and FPX 3500 RPM Composite Curves](image2)
The WFI (Water For Injection) pump is available as a modification of our FP, FPX, or FPR Series pumps. Fristam pioneered the “Double Safe Seal System” to ensure product sterility. The low pressure, low flow seal flush design protects product sterility and saves valuable product. Our unique second recirculation loop assures positive pressure in the critical seal area. The internal seal design provides extra cooling and lubrication on the front seal face. This design significantly extends seal life, which minimizes system downtime.

Fristam’s “Option D” single seal piping arrangement eliminates the need for product flush to the drain and saves valuable product. This configuration option creates high pressure in the low pressure area of the pump behind the impeller to keep product from flashing on the seal.

Designed to be totally cleanable and self-draining for CIP and SIP
Several piping configurations available for changing needs
Manufactured in the U.S.A.

Double Seal Option

![Double Seal Option Diagram]
FZX Series Liquid-Ring Centrifugal Pumps

This sanitary liquid-ring pump provides new capabilities for handling products with entrained air. By using a specially designed impeller and housing, the FZX maintains its prime when other pumps become air bound. This feature makes the FZX more efficient for complete evacuation of tanks and lines during normal process or CIP.

This series is available with either a single or double external mechanical seal and an optional casing drain. The FZX handles product viscosities in excess of 30,000 cps. It is capable of bi-directional operation. Pharmaceutical models with special finish, casing drains and other options are available.

5 pump heads
5 models (low speeds)
For product viscosities in excess of 30,000 cps
Manufactured in the U.S.A.
Fristam High Pressure Series

FM Series Multi-Stage Centrifugal Pumps
Fristam’s multi-stage centrifugals have been developed specifically to generate high pressures and operate under extreme pressure conditions. Perfect for reverse osmosis and similar high pressure applications, this series is less costly to purchase and maintain than other types of high pressure pumps. Fristam’s high pressure centrifugals provide a steady nonpulsating flow which improves product quality and extends run time with less maintenance. Capable of withstanding up to 1,000 PSI inlet pressure and available with up to four stages, the Fristam FM Series can be configured to meet your pressure and flow needs.

- 6 pump heads
- 6 models
- For product viscosities up to 600 cps
- Manufactured in the U.S.A.
FPH/FPHP Series High Pressure Centrifugal Pumps
Fristam’s FPH and FPHP Series centrifugal high pressure pumps supplement the capabilities of the Fristam multi-stage pumps. These models were designed specifically for recirculation in reverse osmosis systems or handling high process line pressures. As recirculation pumps, they offer greater flexibility when designing or upgrading your system. The FPH 3542 handles inlet pressures up to 600 PSI while the FPHP 722 & 3542 models handle inlet pressures up to 1,000 PSI.

3 pump heads
3 models
For product viscosities up to 800 cps
Manufactured in the U.S.A.

CCFM Series Centrifugal Pump
Fristam’s close-coupled FM Series allows you to generate high pressures while conserving space. This single stage pump handles inlet pressures up to 1,000 PSI.

1 pump head
1 model (single-stage only)
For product viscosities up to 800 cps
Manufactured in the U.S.A.
FKL Series Circumferential Piston Positive Displacement Pumps

The high performance FKL uses an advanced rotary piston design to handle demanding applications. Patented technology allows this pump to operate in demanding applications with continuous pressures up to 300 PSI, viscosity up to one million cps, shear sensitive products and adverse suction conditions. Its balanced rotor makes it possible to clean most products from the pump without disassembly or any loss of performance. Innovations in the shaft, bearings and seals increase the FKL’s robust dependability, simplify maintenance and improve pumping efficiency. Stainless steel rotors are available to handle a wider range of chemicals and pharmaceutical products. Electropolished rotors are optional also.

Fristam provides jacketed pump covers for most FKL models for products that require temperature control.

Fristam offers aseptic FKL models with sterile barriers at all seal points, including the cover gasket. They are designed for viscous products and applications requiring low flows and higher pressure while protecting your product from contamination.

10 pump heads
10 models
For product viscosities up to 1,000,000 cps
Manufactured in the U.S.A.

Curves are based on full speed operation.
The FL II bi-wing rotor pump is ideal for applications where easy maintenance and the ability to clean-in-place are key considerations. The FL II is available in sizes from 3/4” to 4” to pump products with viscosities up to 100,000 cps at pressures up to 170 PSI. The FL II uses a variety of innovations to overcome typical positive pump challenges. These innovations include: a low-slip bi-wing rotor that maintains efficiency even on low viscosity products or when trimmed for high temperature; simple timing to reduce maintenance and minimize the potential for rotor-to-rotor contact; an easy-to-assemble pinless seal and universal mounting.

A pharmaceutical version is available to meet specific needs regarding sterility, gentle product handling and drainability.

Fristam provides jacketed pump housings for most FL II models. The jacketed pump housing is designed for products that require temperature control such as sugars, cooking oils, chocolate, HFCS and brewer’s yeast.

**9 pump heads**

**9 models**

**For product viscosities up to 100,000 cps**

**Manufactured in Germany**

Curves are based on full speed operation.
FS Series Shear Blender

Fristam’s FS Series Shear Blender for inline mixing, blends products quickly and consistently. Compared to conventional methods, the Shear Blender shortens processing times significantly. The Shear Blender’s rotor-stator design eliminates unblended product and prevents lumps and masses in product for consistent, repeatable results.

The FS Series can be used to blend, emulsify, disperse, dissolve, texturize and reproduce the particle size of a wide range of products, from simple to demanding applications. The series uses standard seals and housings for easy maintenance and inventory savings.

4 heads
8 models (low and high speed)
For product viscosities in excess of 30,000 cps
Manufactured in the U.S.A.

Features for the FS:
Improves product texture
Reduces processing time
Economical to operate and maintain
Low maintenance design for continuous duty and CIP

FSI Impeller-style option
For applications requiring pumping and mixing, Fristam’s FSI has an integrated impeller that provides high flow rates while still mixing your product. Available on all eight models.
Fristam Powder Mixers

Fristam’s Powder Mixer provides quick, high performance blending of dry and wet ingredients into a fluid stream. Its high shear rates reduce blend times and ensure consistent product results. Additionally, the Powder Mixer saves time by reducing recirculation requirements. This efficient mixing method pulls a relatively constant amount of vacuum and maintains performance even as product viscosity increases.

Fristam’s proven system is a more economical and effective alternative to existing blending/mixing methods. The Fristam Powder Mixer uses the Shear Blender in series with the FZX Series liquid-ring pump to blend dry and wet ingredients into a fluid stream. The FZX Series pump allows the Powder Mixer to pull a consistent amount of vacuum and maintain pumping performance even as product viscosity increases.

Multiple configurations available
Fully customizable for individual needs
Manufactured in the U.S.A.

Features for the Powder Mixers:
Batch to batch repeatability
CIP cleanable pumps and funnel
Unit controls allow operators to adjust powder introduction rates and shear
Custom capabilities to match your application
Engineered for your product

From simple transfer to complex applications, Fristam has the solution to your application needs.

Applications:

Alcoholic beverages
Liquor, wine, champagne, distillates, alcoholic solutions

Brewing
Mash, malt liquor, yeast, beer, hot and cold wort, residual beer, low-alcohol/non-alcohol beer, CIP solutions

Dairy products
Raw milk, whey, cream, skimmed milk, milk concentrate, whey concentrate, curds, pasteurized milk, cheese

Foods
Animal and vegetable oils and fats, vinegar, sauces, flavorings, tomato juice, vegetable juices, mayonnaise, whole eggs, brine, meat broth, dough, stabilizers, chocolate, cocoa

Non-alcoholic beverages
Syrup, concentrates, cider, mineral water, mixed drinks containing CO₂, concentrates with fruit pulp, single strength orange juice, orange juice concentrate

Sugar/confectionery
Liquid sugar, molasses, starch solutions, crystallized sugar, premixes
Bakery
Yeast, CIP solutions, sponge, final dough, cookie dough

Biotechnology
Cell suspensions, nutritive solutions, enzymes

Chemicals
Photographic emulsions, acids, alkalines, waste water containing crystals, cleaning agents, cleaning solutions, slightly contaminated liquids, waste water containing acids and alkalines, chemically contaminated waste process water

Paper/Cellulose
Glues, starch solutions, resin solutions, kaolin solutions

Pharmaceuticals
Pure water, infusion solutions, plant extracts, suspensions, enzymes, nutritive solutions, toxic solutions, blood

Cosmetics
Shampoo, conditioners, lotions, creams, perfumes, beeswax, salves, mouthwash, toothpaste
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