Sanitary Centrifugal Pumps
Fristam Pride

Fristam is a global manufacturer of sanitary centrifugal and positive displacement pumps, mixers and blenders respected for unmatched performance, reliability, and technical superiority.

Fristam manufactured its first pump in 1931. Today, Fristam equipment is used by many of the world’s top dairy, beverage, brewing, bio-pharmaceutical, and food processing companies.

High Lifetime Value

The solid design, precise machining, and robust construction of a Fristam pump ensures efficiency and operational reliability. Fristam pumps simply run better and last longer.

Quality Control

Fristam Pumps USA designs, manufactures, and assembles its pumps in the United States. Each component is carefully checked from raw material through final assembly. The result of this effort is a pump worthy of the valuable product your company produces. To achieve the highest level of quality, Fristam offers the most comprehensive testing and documentation packages in the sanitary pump industry.
Experience and Expertise

Over the past 100 years, Fristam has built its reputation with experience, attention to detail, and a willingness to adapt to changing needs. Fristam’s strong applications engineering capabilities make it the most reliable source for straight, smart answers to process needs.

Fast Delivery, New Solutions

Manufacturing in the United States ensures Fristam customers receive prompt delivery, not lead times measured in months.

Additionally, if a new production challenge arises, Fristam is responsive and able to develop new solutions quickly.

Dedicated Support

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.

Why Customers Choose Fristam

“simply better pumps”
“reliable, dependable”
“high standard for sanitization and performance”
“knowledgeable people who help solve problems”
Fristam Centrifugal Lifetime Value

- High Efficiency
- Low Maintenance
- Gentle Product Handling
- Complete CIP’ability
- Low NPSH Requirements
- Long Seal Life
- Reliability and Durability
- Quiet Operation
Heavy-Duty Construction
Fristam centrifugal housings, covers, and impellers are made from 316L stainless steel castings and forgings for more substantial mass. Other centrifugal manufacturers use thinner stamped or pressed steel.

Due to its solid construction, a Fristam can withstand more hydraulic shock and cavitation which can ruin a pump.

Internal Seal
Fristam’s unique internal seal uses the cooling and lubrication of the product to provide longer seal life.

Close Internal Clearance
Internal clearances are as tight as 0.020 inches, making the pumps highly efficient and very gentle on product.

Optimized Impeller
The ‘optimized vane angle’ design of Fristam impellers maximizes efficiency and allows for low NPSH requirements. A Fristam centrifugal runs smoothly and quietly.

Fristam Centrifugal Pumps Specifications
- Models: 26 (each series)
- Motor Size: up to 100 HP
- Flow Rate: up to 2000 GPM
- Viscosity: up to 1200 CPS
- Inlet Pressure: up to 150 PSI
- Discharge Pressure: up to 450 ft. head / 195 PSI

“Fristams are the best pumps going.”
– Maintenance Manager, Dairy Plant
Seal Life Measured in Years

Seal life is critical to pump performance. Fristam’s unique internal seal uses the cooling and lubrication of the product to provide longer seal life.

Even under extreme conditions, Fristam’s seal life is often measured in years. Some companies have tried to copy Fristam seal designs. None can match the quality and performance of an original Fristam seal.

Easy Maintenance

Self-Aligning Shaft

The self-aligning Fristam shaft design allows for easy installation and gapping. The concentric collar on the shaft prevents run-out, protecting from seal damage.

Simple Tools

No special tools are needed to service Fristam centrifugal pumps.
The Evolution of Fristam Centrifugal Pumps

The FP Series is the original Fristam pump which established the standards for high performance centrifugals. The success of the FP led satisfied customers to request a Fristam pump for less severe applications. The result was the FPX, a pump combining the same pump head with a modified mounting flange and shaft. Since its introduction, the FPX has become an industry standard for most general applications.

FP

The FP’s heavy cast iron pedestal reduces noise and vibration and helps dissipate heat.

Its double mechanical seal option offers flexibility for vacuum withdrawal, aseptic processing, and abrasive products.

FPX

Available in single seal only, the FPX is the pump of choice for standard applications, including product transfer; CIP supply; and pumping to fillers, separators, and heat exchangers.

FPR Front-Loading Seal

In 2004, Fristam Pumps again responded to user requests for a centrifugal pump that continued the legacy of the FP and FPX, but offered a new feature to make maintenance even easier: a front-loading seal.

Today, processors can choose from all three series for maximum flexibility.
FPR: Fast, In-line Seal Changes

FPR Series centrifugal pumps reduce maintenance time and effort. Designed with a front-loading 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, single or double.

Simply remove the cover and impeller, and the rotating and stationary seals can be removed by hand. There is no need to disassemble the housing from the pump.
FPR: Less Maintenance Inventory

Only two seal sizes are needed to fit all models (except 4001, see below). For each pump model, seal size remains the same regardless of motor size.

Fristam pump shafts are designed to fit both the single and double mechanical seal arrangements. This reduces the number of shafts needed to stock for spare parts.

High Flow FPR 4001

For large capacity processing, the FPR 4001 can achieve flow rates of up to 2000 gallons/minute.

Its 6-inch inlet and 14-inch impeller make it ideal for moving large amounts of non-viscous liquid.

“...reliable, easy maintenance, very good centrifugal pump...”
– Maintenance Planner, Pharmaceutical Facility
Fristam Centrifugal Options and Ordering Matrix

### Fitting Type
- C – Clamp*
- B – Bevel seat
- F – 150# flange
- 3F – 300# flange
- N – NPT
- I – I-Line (female)
- X – Other (specify)

### Seal Materials
**Single Seal**
- FR-N – Chrome oxide SS vs. carbon*
- C-C – Silicon carbide vs. silicon carbide
- FR-C – Chrome oxide SS vs. silicon carbide

**Double Seal [FP and FPR only]**
- FR-N-K – Chrome oxide SS vs. carbon vs. ceramic*
- C-C-K – Silicon carbide vs. silicon carbide vs. ceramic
- FR-C-K – Chrome oxide SS vs. silicon carbide vs. ceramic

* Standard

### Preferred Ordering Sequence (sample)
1st – Inlet (in.)
2nd – Outlet (in.)
1st – seal (Viton®*)
2nd – cover gasket (Buna*)
V – Viton®
B – Buna
E – EPDM
X – Other (specify)

### Other Options
- 25 – 25 Ra
- 20 – 20 Ra
- 15 – 15 Ra
- EP – Electropolish
- PV – Passivation
- LF – Low ferrite
- SF – Stainless steel flange
- TC – Tungsten carbide coating
- AS – Aseptic
- JH – Jacketed housing
- CD – Casing drain
- BB – Bearing block mounted
- AL – Adjustable base with legs
- X – Other (specify)

### Fristam Centrifugal Specialty Pumps
- Water for Injection
- Aseptic
- Jacketed Housing

www.fristam.com/usa
Pharmaceutical Options

All standard stainless steel components are 316L. Special castings are available in low-ferrite stainless steel or high-performance alloys such as Hastelloy® and AL-6XN®. Class VI elastomers are standard for pharmaceutical applications, with perfluoroelastomers available. Seal materials include stainless steel, ceramic, silicon carbide, and tungsten carbide.

Electropolishing and enhanced internal surface finishes to 15 Ra are available on most products.

Casing drain and mounting options provide complete drainability critical for long-term system cleanliness. Pumps can be easily configured for steam-in-place sterilization, with no external cooling devices required.

Water For Injection (WFI) Pumps

Fristam is the industry leader for WFI and other high purity service. Fristam WFI centrifugal pumps are a precision adaptation of our FP, FPX, and FPR pumps. They feature an advanced seal design that protects product sterility, saves valuable product and provides for long seal life.

Fristam pioneered a pressurized double seal flush system that ensures product sterility and saves valuable product by maintaining positive pressure in the critical seal area. The internal seal design provides extra cooling and lubrication on the front seal face to significantly extend seal life and provide for more system uptime.

Numerous seal and piping configurations, including single seal piping, are available to meet your processing requirements.

Mission Statement

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

Comprehensive Documentation Package

Certified Drawings
Mill Certification
Physical Certifications
Material Verification
Conformance
Warranty Statement
Certified Finish
Passivation of Pump
Stainless Steel Tag
Paper Location Tag
Certified Welding
Hydrostatic Test
Dynamic Seal Test
Short Run Test
Performance Test
NPSH Test
Witness Test
Vibration Test
Ferrite Test
Saline Test
Seismic Calculation
FPR Composite Performance Curves—1750 RPM*

Performance curves based on tests using 70° water. Actual performance may vary by application or product.

FPR Composite Performance Curves—3500 RPM*

Performance curves based on tests using 70° water. Actual performance may vary by application or product.
FP/FPX Composite Performance Curves—1750 RPM*

Performance curves based on tests using 70° water. Actual performance may vary by application or product.

*See the Fristam Centrifugal Curve Book or visit www.fristam.com/usa for individual pump performance curves.

FP/FPX Composite Performance Curves—3500 RPM*

Performance curves based on tests using 70° water. Actual performance may vary by application or product.

*See the Fristam Centrifugal Curve Book or visit www.fristam.com/usa for individual pump performance curves.
FPR Single Flange Dimensional Drawing

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FPR Double Flange Dimensional Drawing*

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*Visit www.fristam.com/usa for FPR 4001 dimensional drawings.

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