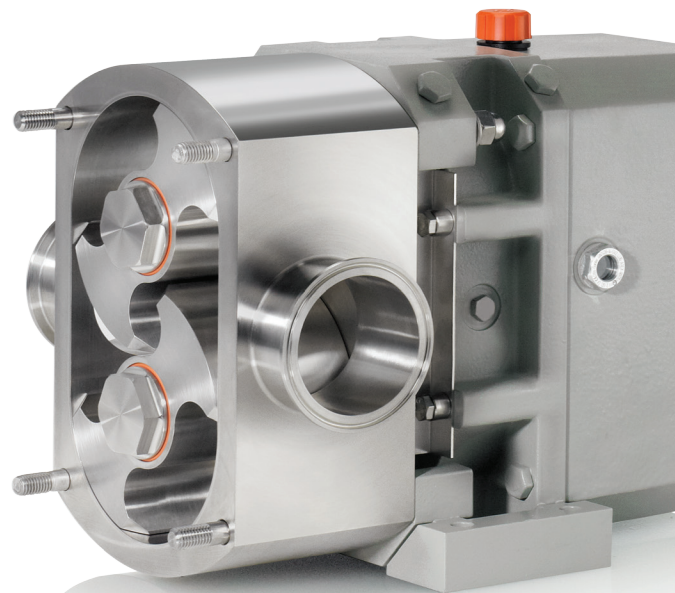
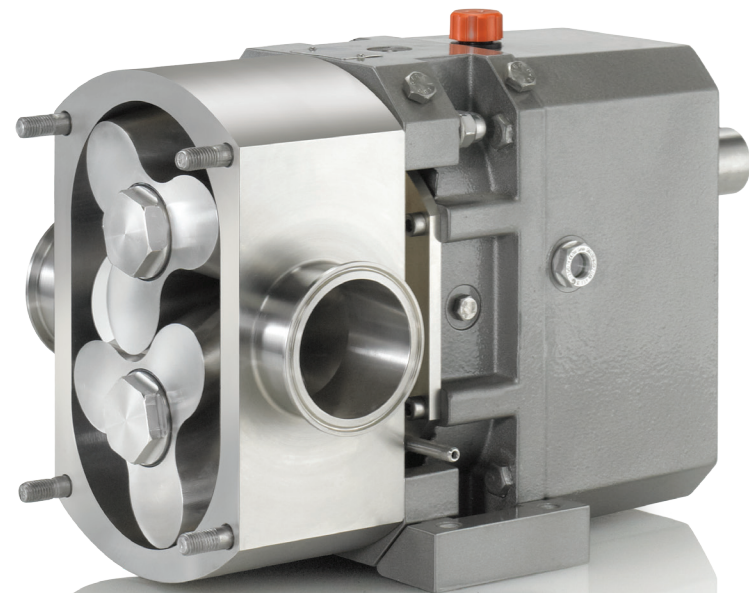


Fristam FL

Positive Displacement Pumps



Fristam
PUMPS®
Engineered For Lasting Performance®



Engineered For Lasting Performance

Fristam is an international manufacturer of sanitary centrifugal and positive displacement pumps, mixers, and blenders, respected for unmatched product performance, reliability, and technical superiority. Fristam was founded in 1909 and manufactured its first pump in 1931. Today, Fristam equipment can be found in many of the world's top beverage, brewing, bio-pharmaceutical, and food processing companies.

WHY CUSTOMERS CHOOSE FRISTAM

"simply better pumps"

"reliable, dependable"

"high standards for sanitization"

"people that help solve problems"



Friederich Stamp, Founder

Fristam's FL2 Series Rotary Lobe Pump

The Fristam FL2 positive displacement pump handles products gently and efficiently and is completely CIP'able. Fristam's FL2 Series pumps use a proven design to provide gentle product handling, ease of maintenance, complete cleanability, and high efficiencies.

PROTECTS PRODUCT

The FL2's bi-wing rotors and simple circular motion maintain your product's integrity by minimizing the potential of rotor-to-rotor contact. Additionally, its special rotor geometry reduces shear and provides gentle product handling.

EASY MAINTENANCE

The FL2 Series' seals are extremely simple. Their unique design locks both the stationary and rotary seals in place. No pins or set screws are required. The pump's components are designed to fit one way only—the right way—for easy and correct installation.

Rotor gaps are set outside the gearbox using a simple gapping spacer. The pump's bearings and gears run in an easily viewed oil bath.

COMPLETE CLEANABILITY

The FL2's seal and housing are designed for thorough, easy CIP cleaning with rotors in place. Well designed gasketing avoids crevices and hard to clean areas. Rotor-to-housing clearances allow turbulent flow at all points in the housing during CIP. Optional high-temperature rotors allow for SIP.

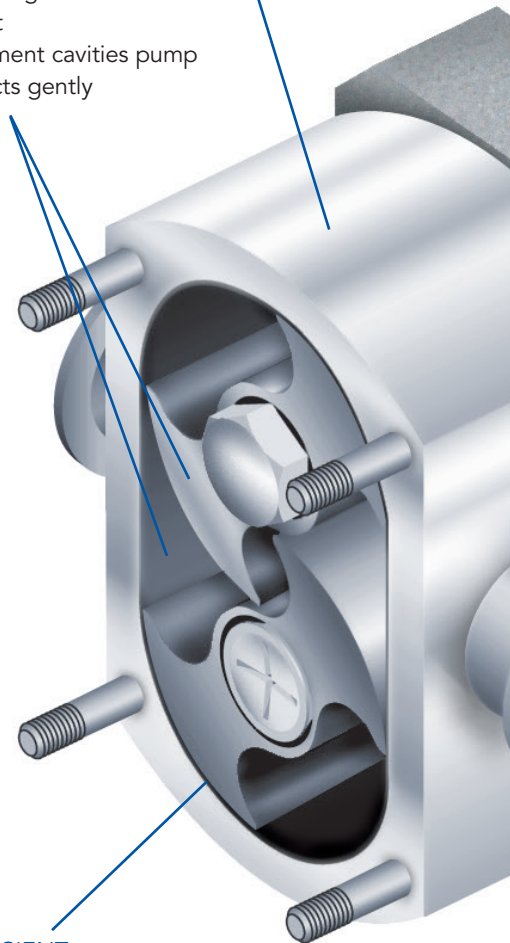
Simple vertical mounting makes the pump entirely self-draining.

CLEAN

- 316L stainless steel—housing, rotors, and seal components
- CIP'able and SIP-able

GENTLE

- Bi-wing rotor design eliminates rotor-to-rotor contact
- Large displacement cavities pump delicate products gently

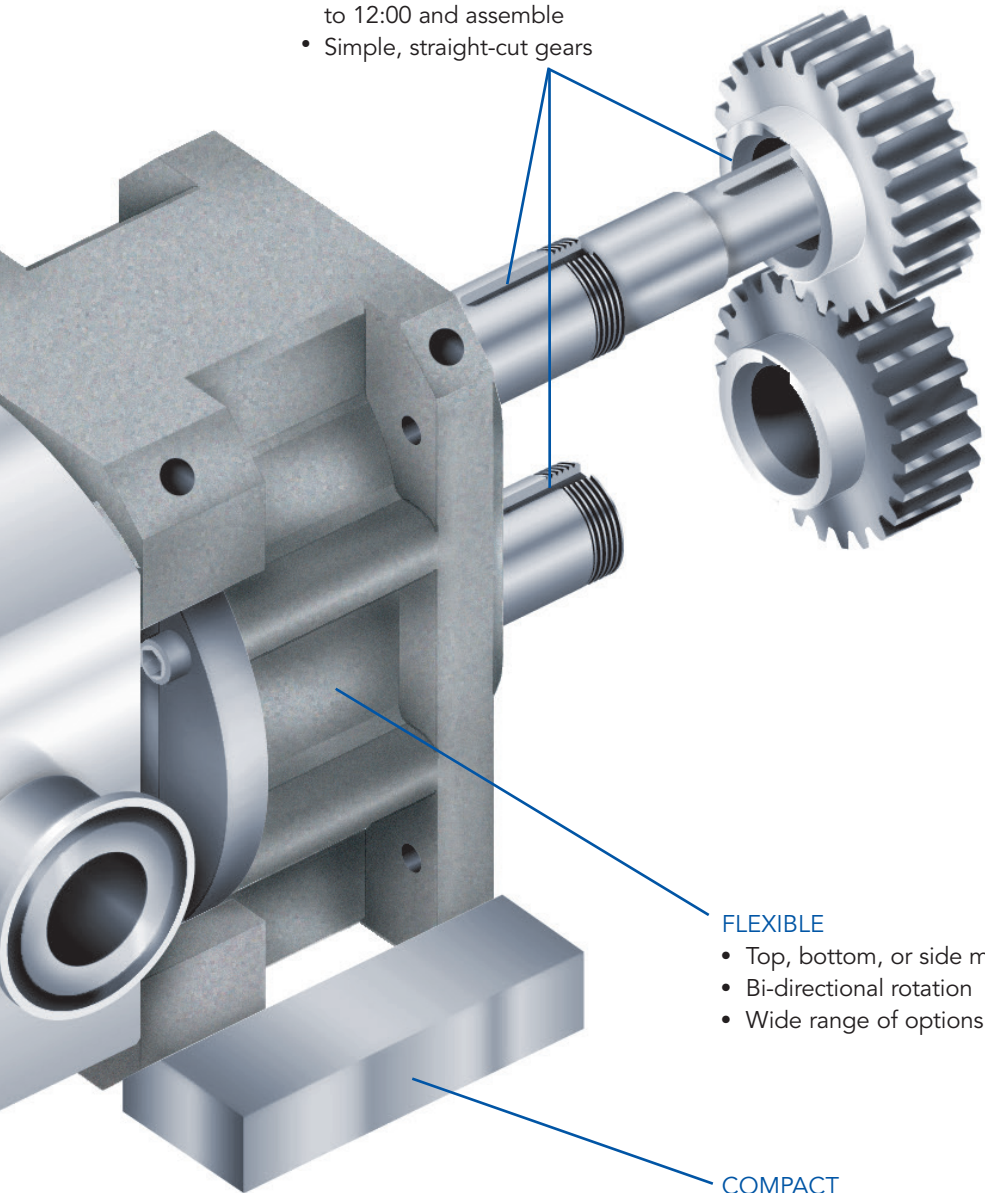


EFFICIENT

Long seal path minimizes slip for maximum efficiency

SIMPLE

- Timing is simple: turn both gear keys to 12:00 and assemble
- Simple, straight-cut gears



FLEXIBLE

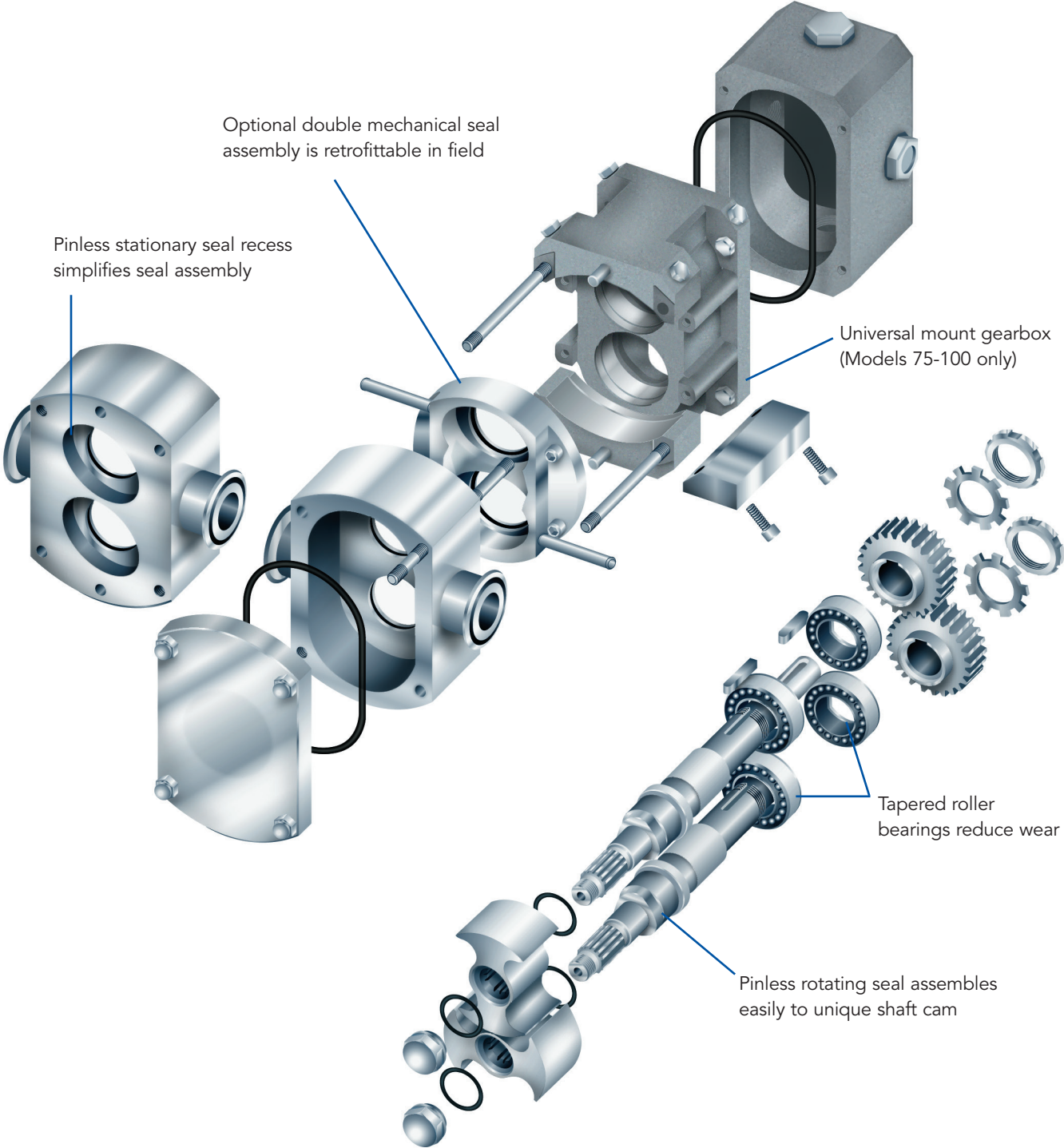
- Top, bottom, or side mount
- Bi-directional rotation
- Wide range of options (page 5)

COMPACT

Small footprint

FL2 Components at a Glance

(Models 75-130)



FL2 Specifications

Nine pump models and a full range of options are available to match process needs precisely.

GENERAL SPECIFICATIONS

- 316L stainless steel housing, cover, shaft and rotors
- Standard rotors for process temperatures to 180° F
- Viton elastomers standard
- Single Mechanical seals: Carbon vs. Chrome Oxide coated Stainless Steel standard
- Double Mechanical seals: Carbon vs. Chrome Oxide coated Stainless Steel vs. Carbon standard
- Painted mild steel gearbox
- Universal mounting standard (except model 130)
- CIP/SIP

OPTIONS

- Wide variety of drives and bases
- Single or double mechanical seals
- Silicon Carbide mechanical seals
- Viton®, EPDM, Kalrez, Chemraz® and Silicone elastomers
- Integral pressure relief valve
- Vertical mount
- High temperature rotors to 360° F
- Jacketed housing and cover
- Rectangular inlet
- Most sanitary and industrial port connections

PHARMACEUTICAL PACKAGE

- Up to 15 Ra finish
- Electropolish
- Silicon carbide seal materials
- USP Class VI elastomers
- Passivation
- Validation documentation



Vertical Mount Option
for complete drainability

FL2 Model	15	58S	58L	75S	75L	100S	100L	130S	130L
Gallons Per Revolution	0.0056	0.0267	0.039	0.072	0.098	0.176	0.274	0.465	0.645
Maximum Pressure	130 psi	130 psi	115 psi	170 psi	120 psi	170 psi	120 psi	170 psi	120 psi
Fitting Size	0.75"	1"	1.5"	1.5"	2"	2.5"	3"	3"	4"

The New FL3 Series Helical Tri-Lobe Pump

Fristam's FL3 pump is a helical tri-lobe version of the Fristam FL2 pump. It is designed to ensure low pulsation and be run at higher RPM speeds to accommodate higher flow cleaning of the system (CIP).

GENTLE TRANSFER, COMPLETE CIP

Fristam's new FL3 series positive displacement pump provides gentle, high speed product transfer and complete CIP in one pump.

The FL3 ensures an almost perfectly steady product stream, with exceptionally gentle treatment of product. The key is its helical tri-lobes that reduce noise and virtually eliminate pulsation. This design also allows the pump to be run at high speeds to facilitate high transfer capacity and effective CIP, with rotors in place. As a result, the FL3 eliminates the need for both a transfer and CIP pump, saving time and money.

GENERAL SPECIFICATIONS

- 316L stainless steel housing, cover, shaft and rotors
- Standard rotors for process temperatures to 180° F
- Viton elastomers standard
- Single Mechanical seals: Carbon vs. Chrome Oxide coated Stainless Steel standard
- Double Mechanical seals: Carbon vs. Chrome Oxide coated Stainless Steel vs. Carbon standard
- Painted mild steel gearbox
- Universal mounting standard
- CIP/SIP

OPTIONS

- Wide variety of drives and bases
- Single or double mechanical seals
- Silicon Carbide mechanical seals
- Viton®, EPDM, Kalrez, Chemraz® and Silicone elastomers
- Vertical mount
- Jacketed housing and cover
- Most sanitary and industrial port connections

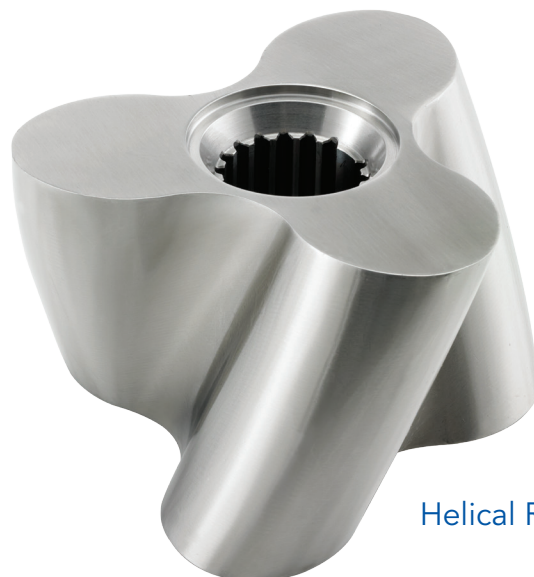
SPECIAL PACKAGES

- CIP/SIP package
- Lower Ra finishes on internal product areas
- Electropolish
- Passivation

FL3 APPLICATIONS

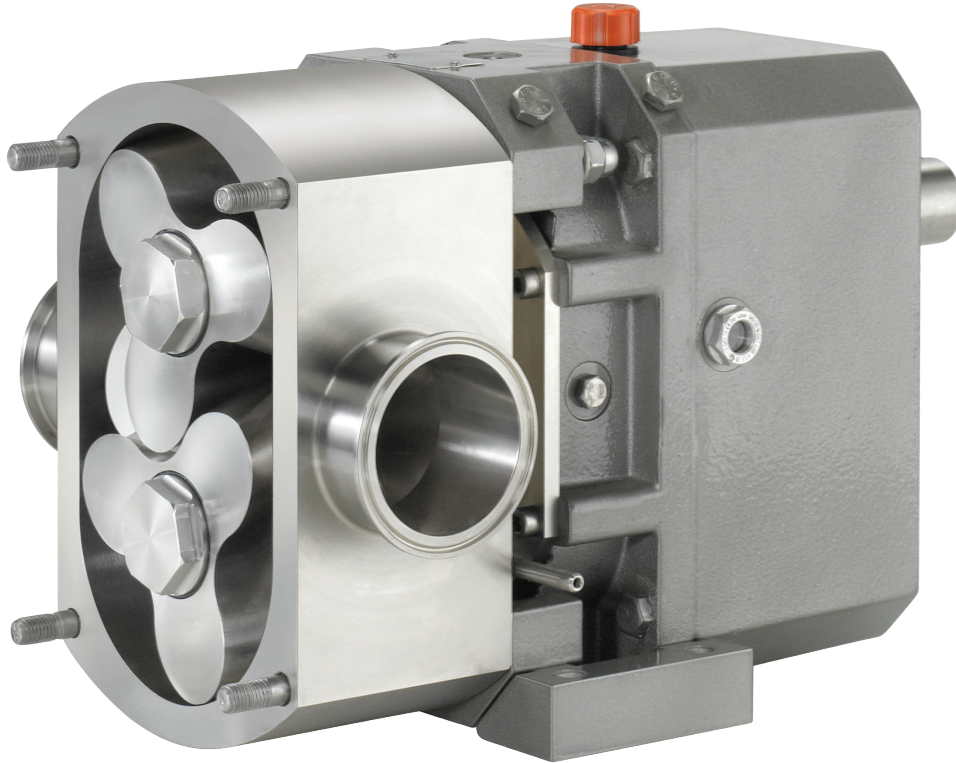
The suction capabilities and low pulsation of the Fristam FL3 positive displacement pump have proved ideal in a wide range of applications.

- Body lotion
- Butter oil
- Cheese curd
- Cognac
- Cream
- Fruit
- Glucose syrup
- Liquid sugar
- Orange juice concentrate
- Soft cheese
- Sour cream
- Sparkling wine



Helical Rotor Design

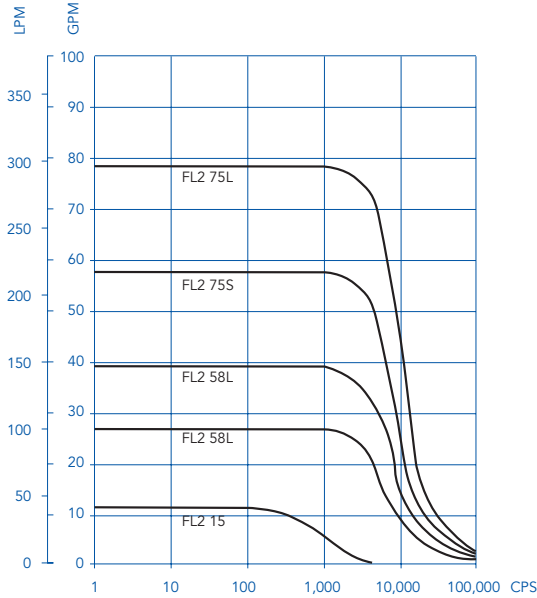
Product Transfer and CIP in One Pump



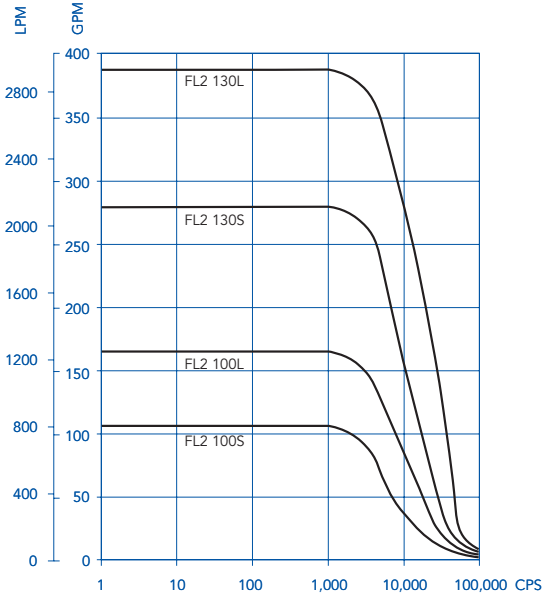
FL3 Model	75	100
Gallons Per Revolution	0.10	0.31
Maximum Revolution Speed (Product)	700 rpm	700 rpm
Maximum Revolution Speed (Water)	1,000 rpm	1,000 rpm
Maximum Discharge Flow (Product)	53 gpm	150 gpm
Maximum Discharge Flow (Water)	85 gpm	220 gpm
Maximum Discharge Pressure	115 psi	115 psi
Fitting Size	2"	3"

Composite Performance Curves

FRISTAM POSITIVE DISPLACEMENT
PUMPS FL2 15-75



FL2 100-130



Curves are based on 70°F water and full-speed operation

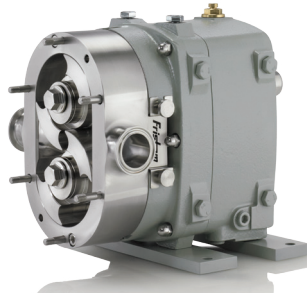


**Designed, Manufactured &
Assembled in Middleton, WI**





CENTRIFUGAL



POSITIVE DISPLACEMENT



MIXING & BLENDING