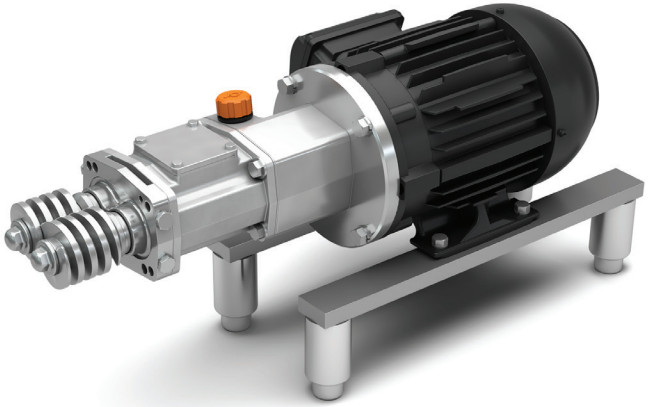


TWIN SCREW PUMP

# FRISTAM FDS NANO



***Fristam***  
Hygienic Pumping Experts

# THE NANO ADVANTAGE

## A TWIN SCREW FOR PUMPING, PRECISION AND CIP

It's the smallest single flow twin screw pump in the world! The FDS Nano shares many design principles and advantages of our twin screw pump technology, but with key differences, which aid its ability to perform as a low-capacity, precision flow pump.

## 3 IN 1: ONE PUMP FITS ALL

Unlike other low-flow pump technologies, an FDS Nano can alternate between operating at very low speeds for pumping process fluids and high speeds (up to 4,000 rpm) for CIP.

This makes an FDS Nano equally suitable for:

1. Precision flow control
2. Pumping viscous products
3. Pumping CIP fluids

As the FDS Nano has the capability of fulfilling all three applications, the initial investment, operation and maintenance costs are all decreased.

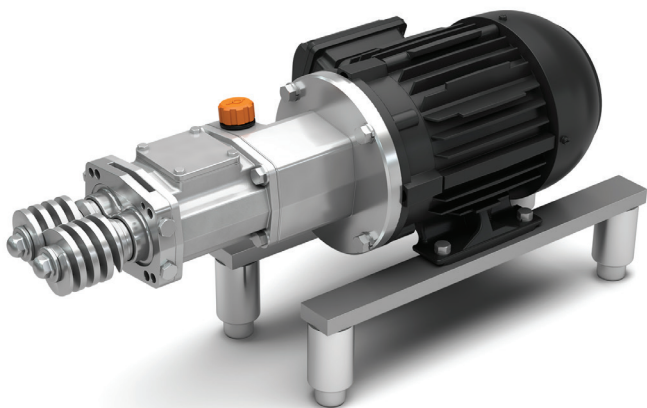
Using just one pump also reduces the likelihood of contamination occurring in pipework, improving hygiene on the line.

## SMOOTH, CONSISTENT FLOW

Axial movement from the screw design transports product with virtually no pulsation. This is perfect for a smooth flow that enables accurate and consistent delivery into the line.

## ENTRAINED AIR HANDLING

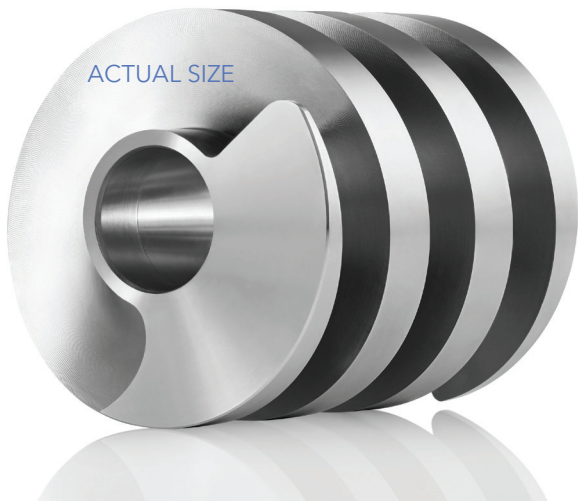
The FDS Nano can also handle up to 70% air in the line at any time. Unlike most pump technologies it can also handle air pockets/slugs without air-locking.



## TAILOR-MADE SCREWS

With six standard screw sizes available, each designed to fulfill a different purpose, your FDS Nano can be tailor-made to fit your application perfectly.

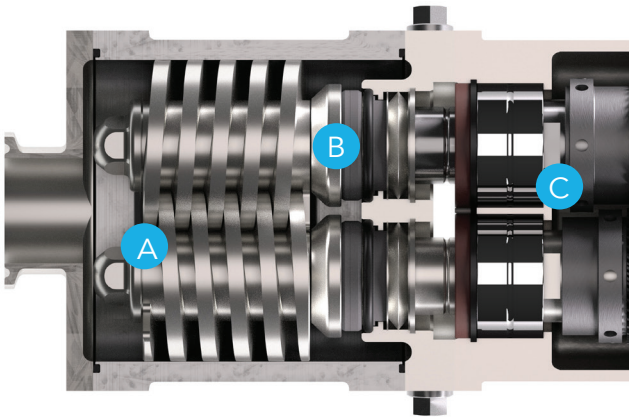
To ensure optimal performance, the perfect screw size is chosen based on characteristics of the product being pumped and the wider process set up.



# INTERNAL COMPONENTS

## ADAPTED DESIGN

A combination of state-of-the-art manufacturing methods and experienced machine operators enabled Fristam to successfully downsize many key features of our twin screw technology for the FDS Nano design without compromising quality or efficiency.



## TIGHT TOLERANCES (A)

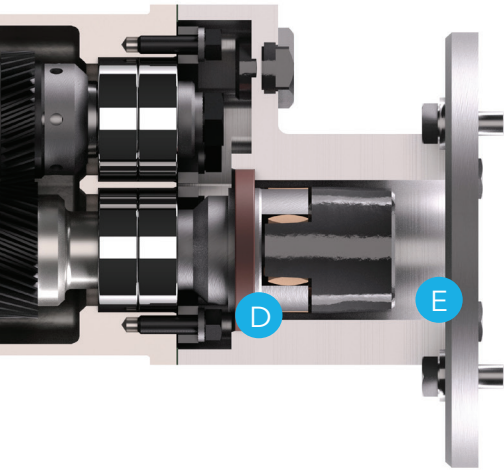
Precise manufacturing methods keep the screws contact-free, so there is no wear to any components. This leads to less back-flow and the highest possible efficiency.

## MECHANICAL SEALS (B)

Front-loading component seals are integrated in the seal housing. The material and position (suction or discharge side) of the seals ensures the longest possible lifespan.

### SCREW ALIGNMENT (C)

Simple axial movement of one gear makes it possible to align clearances between the screws. This unique feature keeps screw alignment outside of the product area and still reachable without removing the pump or the motor from the line.



### FLEXIBLE COUPLINGS (D)

A flexible coupling limits vibrations from the pump and its driver. This is a key factor for smooth operation and the longevity of all components. The coupling area is located outside the oil bath, making service much easier.

### COMPACT MOTOR MOUNTING (E)

Using a direct-mounted motor, together with a built-in coupling enables the pump to be as compact as possible. Oil will remain sealed within the gearbox when the motor is removed.

# NANO APPLICATIONS

## PROCESS FLOW

The Nano provides all the efficiency and benefits of the FDS line at a lower flow volume.

## PRECISION FLOW CONTROL

The low-flow and low-pulsation allow the FDS Nano to deliver precise and repeatable flow.

- CIP chemicals
- Food and beverage flavorings
- Personal care ingredients

## PHARMACEUTICAL

The Fristam FDS's ability to operate at up to 4,000 RPM ensures sufficient flow for CIP cycles, eliminating the need for a separate CIP supply pump and additional piping and valves to maintain a high standard of cleanliness.

- Live cells, cultures, and enzymes
- Medical creams, gels, and pastes
- Protein denaturing = less than 4% reduction in Immunoglobulin G
- Hemolysis rate below 5% - Ensures minimal red blood cell degradation

# SPECIFICATIONS

## PERFORMANCE RANGE

Maximum Discharge Pressure: 145 psi (10 bar)

Flow Rate, Product: 2.2 gpm (500 l/hr)

Maximum Flow Rate, CIP: 13 gpm (3 m<sup>3</sup>/hr)

Maximum Rotational Speed: 4,000 rpm

Maximum Viscosity: 1,000,000 cps

# USA BUILT AND TESTED

Fristam pumps, blenders, and mixers are designed and manufactured in Middleton, Wisconsin to provide you with the highest quality products and service.



By controlling every step of the design and manufacturing process under one roof, we can ensure complete quality assurance. Our locally sourced stainless steel and cast iron is inspected in its raw state to ensure quality and composition. This raw material progresses through our manufacturing facility, machined and polished to precise specifications by expert technicians. Pumps, blenders, and mixers are assembled and tested to exact protocols and shipped promptly.

We pride ourselves on unparalleled customer service. Fristam provides you with a strong line of communication and local support, before and after your purchase. Our pump experts will help you choose the right pump to match your application and ship it to you quickly. It doesn't end there; in addition to our dedicated staff, we partner with a comprehensive network of distributors to provide local, responsive service and support.

At Fristam we strive for perfection through continuous improvement each and every day. All of our employees—from our President to our employees on the shop floor—continually seek ways, big and small, to perfect our products, services, and processes. This is what allows us to provide you with the best pumps, blenders, and mixers on the market, and we plan to keep it that way.



***Fristam***  
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[www.fristam.com/usa](http://www.fristam.com/usa)

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