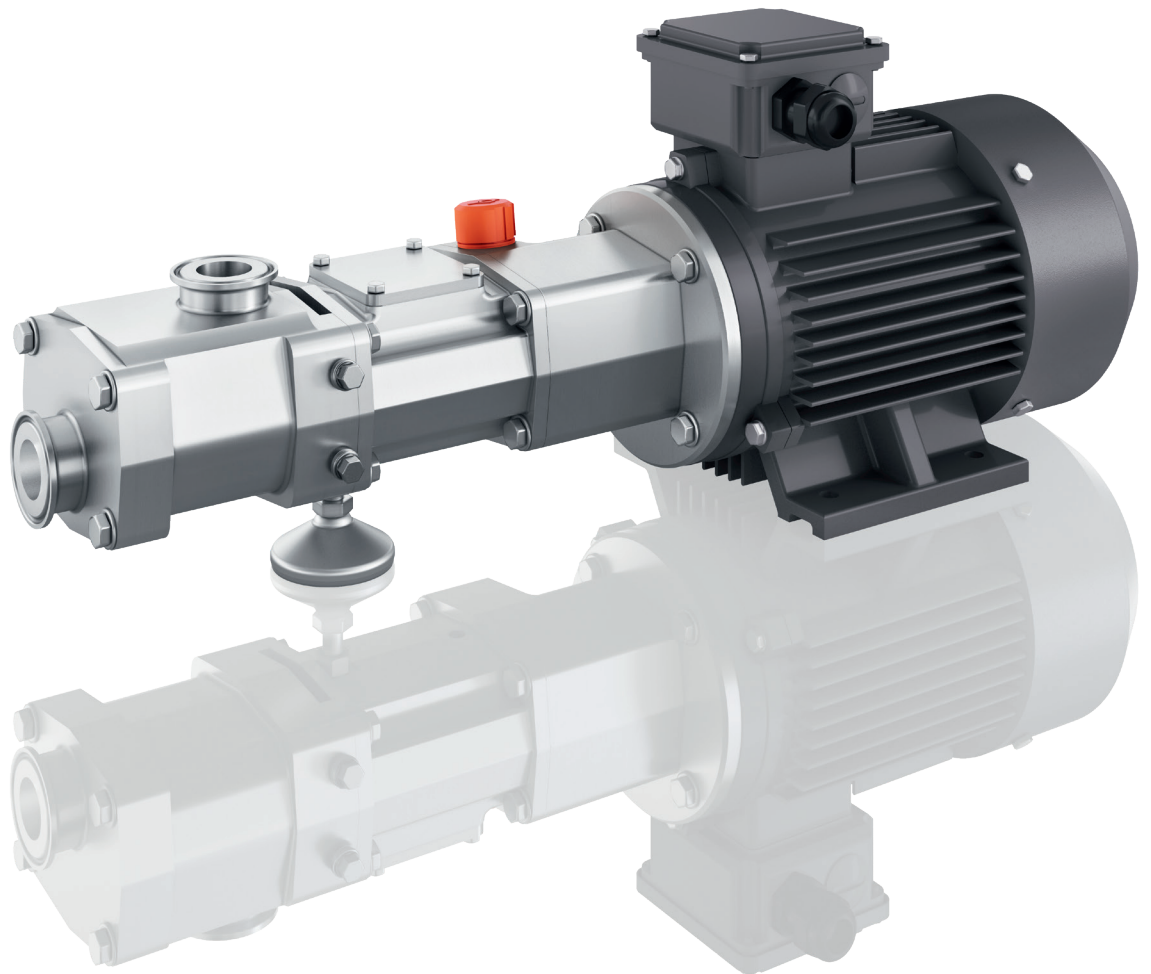


# Fristam FDS Nano

The smallest double screw pump



**Fristam**  
Hygienic Pumping Experts

# Fristam FDS Nano

## A double screw pump for dosing, pumping and CIP

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



### SMOOTH, CONSISTENT FLOW

Axial movement from the screw design transports product with virtually no pulsation. This is perfect for dosing, as a smooth flow enables accurate and consistent doses to be delivered to the line.

### TAILOR-MADE SCREWS

To ensure we select the perfect pitch - we gather deep insights into everything from the characteristics of the product being pumped, to the wider process set up before selecting the optimal screw for each pump.

With 6 standard screw pitch sizes available, each designed to fulfil a different purpose, your FDS Nano can be tailor-made to fit your application perfectly.

### HIGH GAS CONTENT HANDLING

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

### Key Benefits...

#### 3 IN 1 - ONE PUMP FITS ALL

Unlike other dosing or low flow pumping technology, an FDS Nano can alternate between operating at very low speeds for dosing & pumping and high speeds (up to 4,000rpm) when pumping CIP.

This makes a FDS Nano equally suitable for:

1. Dosing
2. Pumping viscous products
3. Pumping CIP fluids

As the FDS Nano has the capability of fulfilling all 3 applications initial investment, running and maintenance costs are all decreased.

Using just 1 pump also reduces the likelihood of contamination occurring in pipework - improving hygiene on the line.



### ACTUAL SIZE

# 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 double screw technology for its FDS Nano design, without compromising on quality or efficiency.

## A - Tight tolerances:

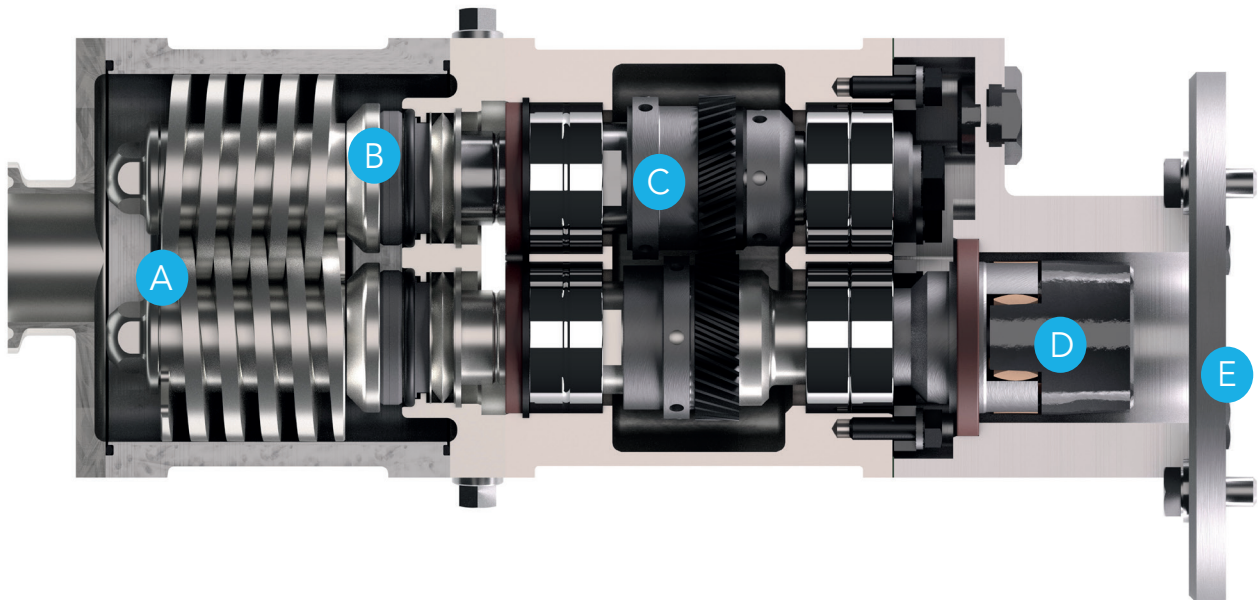
Precise manufacturing methods keep the screws contact-free, so there is no wear to any components. This leads to less back-flow and the highest possible efficiency.

## B - Mechanical seals:

Front loading component seals are integrated in the seal housing. The material and position (suction or discharge side) of the seals is dependant on a number of factors we consider, to ensure the longest possible lifespan.

## C - Screw alignment:

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.



## D - Flexible couplings:

A flexible coupling is used instead of a rigid connection. This decouples vibrations from the pump and its driver. This is a key factor for smooth operation and the longevity of all components.

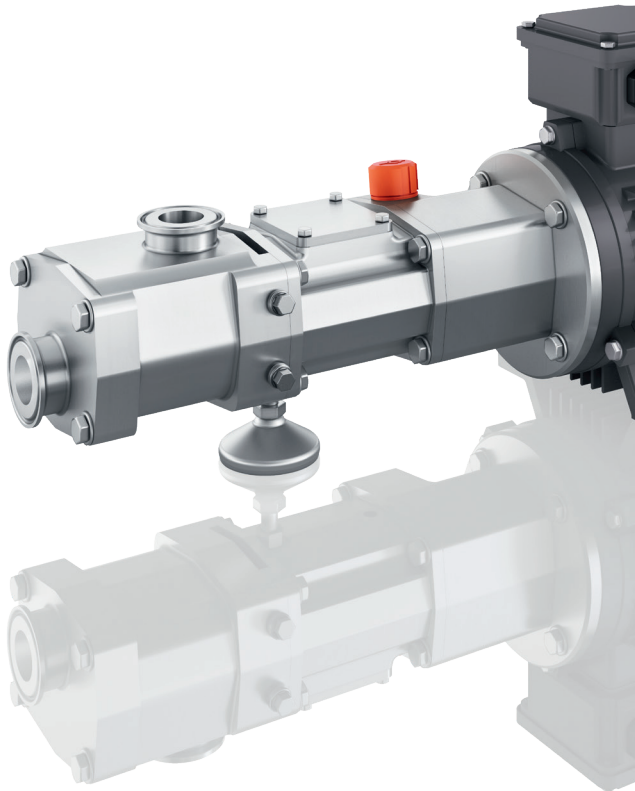
The coupling area is located outside the oil bath, which makes service much easier. This then enables it to be driven by various drivers (such as geared or servo motors).

## E - Motor advantages:

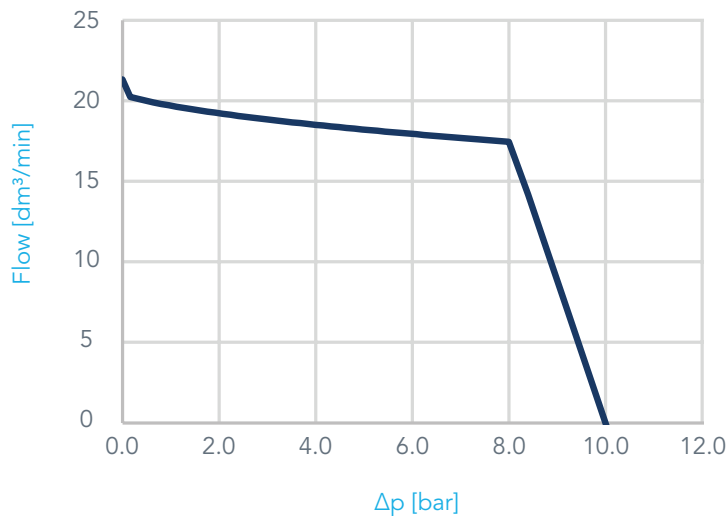
Having a B5/B34 flange and a mounted motor, together with a flexible coupling enables the pump to be as compact as possible.

Oil will remain sealed within the gearbox when the motor is removed.

# Technical table and curves



MODEL	FDS NANO
Max. discharge pressure [bar]	10 bar
Max. flow rate [m <sup>3</sup> /h]	5-500L/h (Product) 3m <sup>3</sup> /h (CIP)
Connection DN [mm]	10-40
Max. rotation speed [1/min]	4000 rpm
Max. particle size [mm]	12
Feed screw pitches styles	6 pitch sizes available
Connection types	Standard Tri clamp Others possible
Viscosity range	0.5 to 1 million cP
Rotation	Clockwise or anti-clockwise
Max. temperatures (°C)	150°C standard 220°C special version
Gasket materials	FKM, EPDM and HNBR
Mounting	Horizontal (B5) standard Vertical & sideways optional
Mechanical seals	Single or single flushed
Installation	Self supporting standard Baseplate optional



## PERFORMANCE CURVE

Based on transporting water