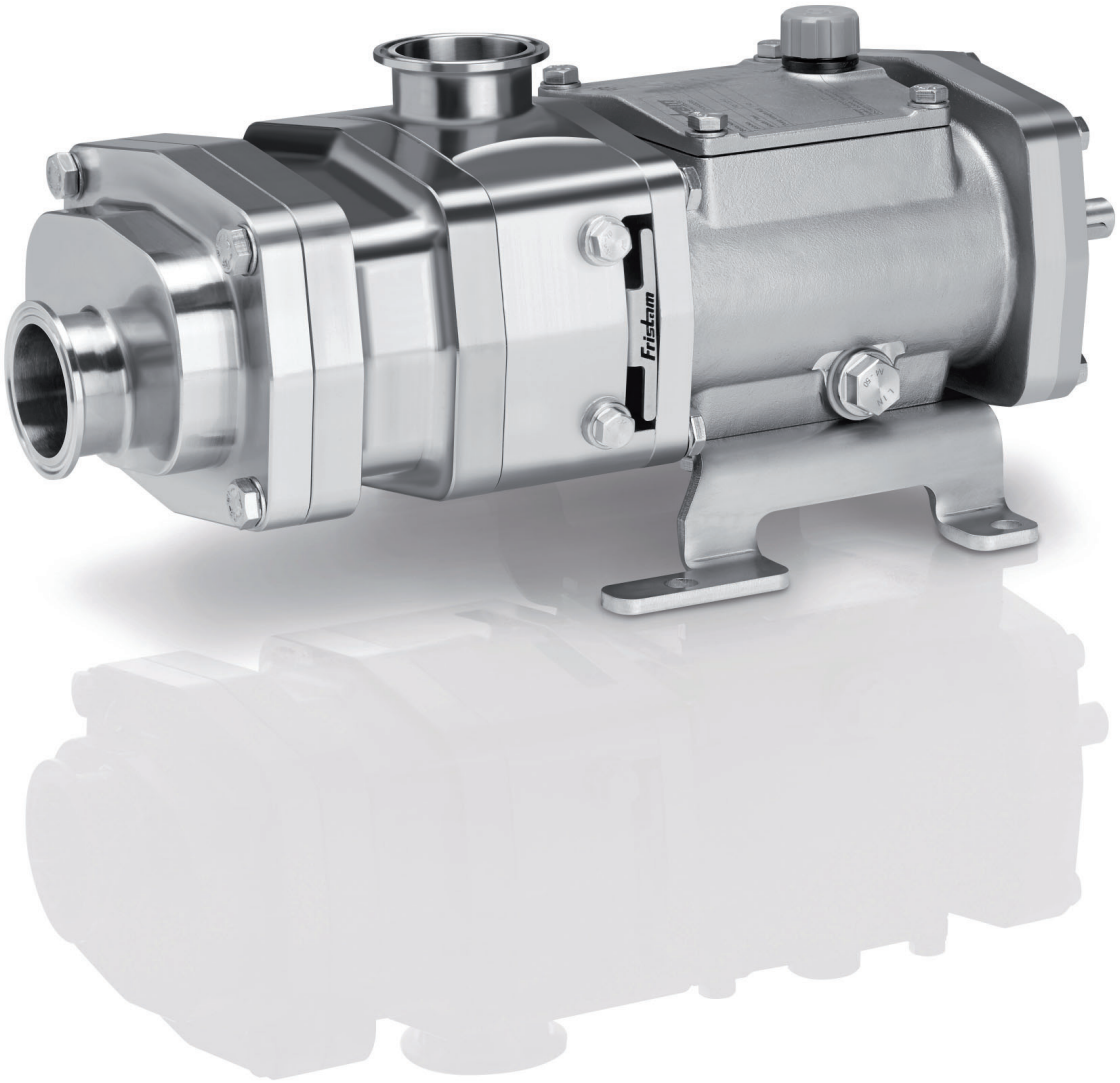
Fristam FDS



Fristam
Hygienic Pumping Experts

The Fristam FDS twin-screw pump

Engineered to Eliminate Limitations. Designed to Maximize Performance.

When processing demands push equipment to the limit, the right pump makes all the difference. The Fristam FDS was developed to overcome the shortcomings of traditional twin-screw technology—delivering reliable performance across the most challenging applications.

The FDS resolves common issues such as vibration, overheating, and complex maintenance. With precise engineering and optimized component design, it ensures smooth operation, consistent temperature control, and easy service—while delivering maximum durability, hygiene, and versatility.

One Pump. Endless Possibilities.

The FDS adapts seamlessly to a wide range of products and processes:

- Handles both ultra-viscous materials and thin, low-viscosity liquids at up to 3,600 rpm (models 1-5) and 4,000 rpm (FDS Nano).
- Eliminates the need for a separate pump during CIP, saving time, space, and cost.
- Maintains efficiency under high differential pressures without overheating.

Gentle Yet Powerful.

The FDS' axial transport principle ensures extremely low pulsation, even at maximum pressure. Delicate products are handled gently, while throughput and efficiency remain high.

Hygiene Built In.

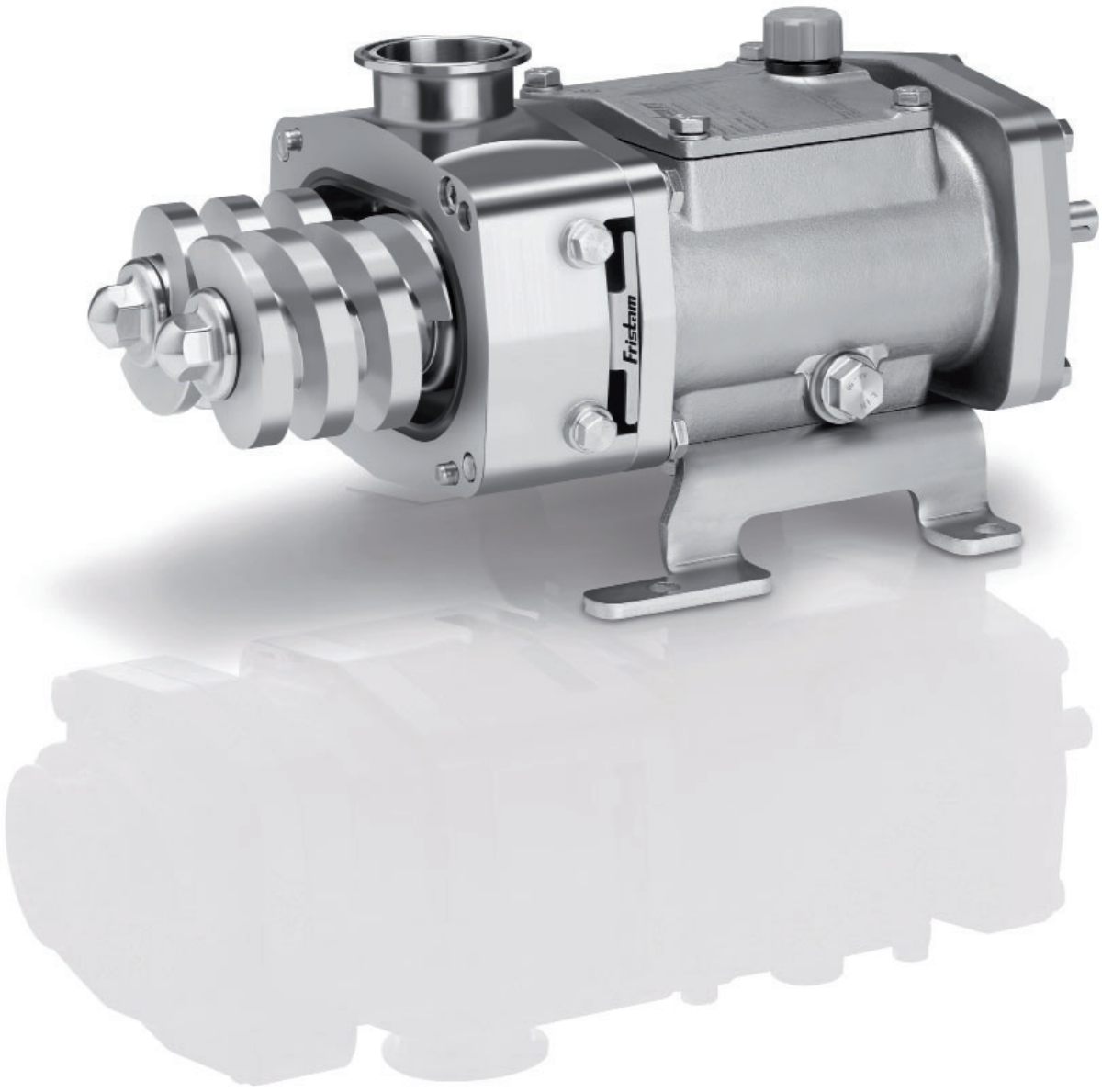
For sanitary applications, the FDS sets the standard:

- Mechanical seals are fully flushed under constant pressure.
- No dead zones or cavities—no residue after CIP.
- Designed for full sterilization to meet the strictest hygienic requirements.

Simplified Maintenance.

Service should never slow production. The FDS makes it easy with quick seal and screw replacement. Smart design and premium materials ensure long life with minimal downtime.

The Fristam FDS twin-screw pump



Twin-screw technology, redefined

Advanced Design Features

INCREDIBLE VERSATILITY

The Fristam FDS is built to perform where other pumps fall short—delivering reliable results across the most demanding and diverse applications.

- Transfers thick concentrates to thin liquids, even with entrained air.
- Operates reliably across extreme temperature ranges.
- Handles low NPSH conditions without issue.
- Maintains nearly pulsation-free flow for product protection.
- Maximizes energy efficiency and volumetric performance.
- Fully evacuates tanks and lines, reducing waste and improving yields.

MECHANICAL SEALS

The FDS' semi-cartridge seals are fully immersed in product flow, providing reliable protection with both single- and double-acting designs. The front-loading configuration allows quick replacement in just a few steps, minimizing downtime and technical effort.

SOPHISTICATED CASING

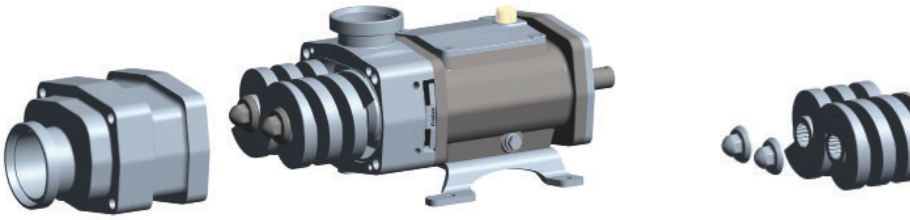
Models 1–5 feature a three-piece pump casing (seal housing, screw casing, and pump cover) designed for flexibility and easy adaptation to system requirements. Tight internal clearances deliver maximum efficiency while allowing quick access for service.

SEAMLESS SEAL CHANGEOVER

The FDS' pump casing, cover and the two screws can be removed in just a few simple steps.

After unlocking the item keys that secure the mechanical seals in place, they can be removed and replaced easily and quickly from the front of the pump.

The entire procedure requires only a few moments and can be carried out without great technical effort.



1. Removal of pump casing and cover

2. Remova

MAXIMUM FLEXIBILITY

No matter the challenge, the Fristam FDS adapts to your needs. A variety of feed screw options ensure it performs reliably across diverse applications, while its smart construction makes installation simple and service effortless. The result: a pump that meets the highest standards while making your job easier.

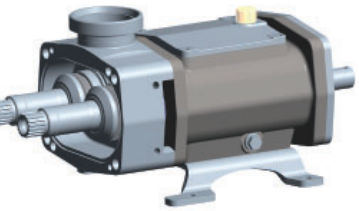
CHOOSING THE RIGHT SCREWS

Choosing the right screw pitch is essential to getting the best performance from a twin-screw pump. Screw pitch directly impacts how efficiently your pump handles product, protects sensitive materials, and maintains reliability in tough conditions.

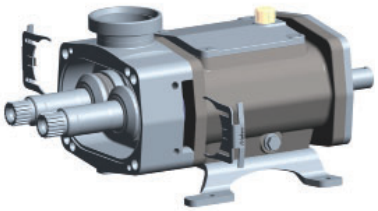
- Smaller pitches withstand higher pressures and reduce NPSHR.
- Larger pitches maximize throughput for faster processing.
- Profiles are available to gently handle solids, particles, or shear-sensitive materials.

ESPECIALLY SOLID SHAFT

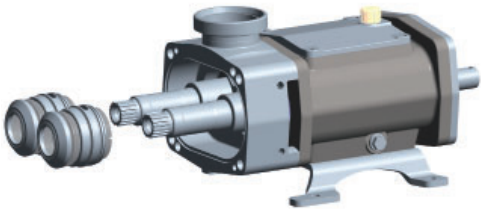
The FDS shaft is engineered for strength where it matters most—at its critical diameter. This added rigidity keeps performance stable even under the toughest conditions, ensuring smoother operation, reduced heat buildup at high pressures, and a longer service life for your pump.



f screws



3. Unlocking of item keys



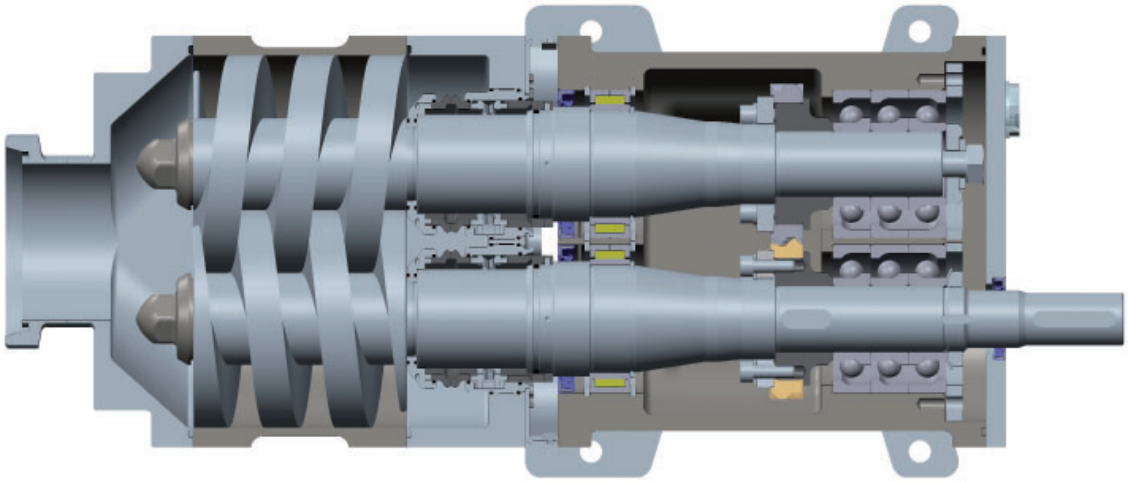
4. Exchange of mechanical seals

SOPHISTICATED GEARBOX

The FDS gearbox combines durability with ease of maintenance:

- Oversized bearings and extended spacing provide optimized bearings support, even under high axial loads and extreme speeds.
- A precisely engineered lubrication system maintains constant oil circulation, reducing wear and extending service life.
- Centrally positioned timing gears ensure compact design, balanced strength, and ease of timing.
- A removable cover allows direct access to gears and seals, no need to move the pump or adjust the drive.

The result is a gearbox that combines smart design with hands-on convenience, giving you reliable performance with minimal maintenance.



FDS NANO: COMPACT PRECISION

The FDS Nano brings the same hygienic performance to small-batch and high-precision applications. With flow rates from 5 L/h to 900 L/h, (1.3 to 238 gph) on product and up to 3 m³/h (13.2 gpm) on CIP, the Nano is ideal for laboratory, pilot, and specialty production.

Capable of speeds up to 4,000 rpm and viscosities up to 1 million cP, The FDS Nano combines gentle, pulsation-free product handling with the durability and easy maintenance expected from Fristam—all in a space-saving design.

SAMPLE FDS APPLICATION

	Product	CIP
Medium	Concentrate (whey, fruit)	Detergent, water
Viscosity	200 – 1,000 cps	1 cps
Flow rates	6 m³/h (26 gpm)	18 m³/h (80 gpm)
Differential pressure	8 – 10 bar (116 – 145 PSI)	2 bar (29 PSI)
Temperature	5 – 30°C (41 – 86°F)	85°C (185°F)
Shaft power	2.8 – 3.5 kW (3.8 – 4.7 hp)	3 kW (4 hp)
rpm	650 – 750	1,800
Motor frequency	34 – 40 Hz	95 Hz

Pump: FDS 2-3 with six-pole 5.5 kW three-phase motor

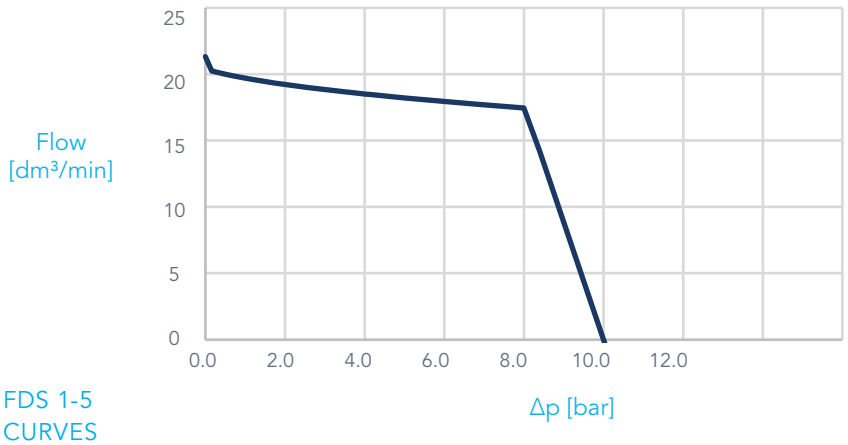
TECHNICAL DETAILS OF THE FRISTAM FDS SERIES

MODEL	FDS NANO
Max. discharge pressure	10 bar (145 psi)
Max. flow rate	Product: 5-900L/h, 1.3–238 gph CIP: 3m³/h, 13.2 gpm
Connection DN	10–40 mm, 0.39–1.57 in
Max. rotation speed [1/min]	4,000 rpm
Max. particle size	12 mm (0.47 in)
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 counter-clockwise
Max. temperatures	150°C/302°F standard 220°C/428°F 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

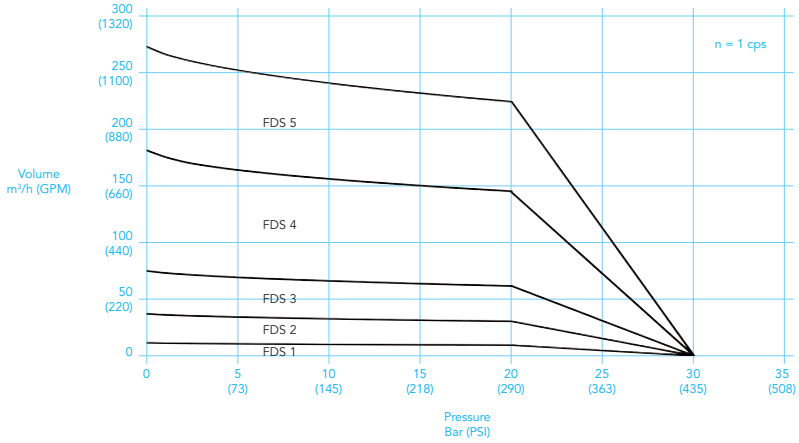
MODEL	FDS 1	FDS 2	FDS 3	FDS 4	FDS 5
Max. Discharge Pressure	25 bar (363 psi)				
Max. Flowrate	20 m³/h (88 gpm)	40 m³/h (176 gpm)	100 m³/h (440 gpm)	250 m³/h (1100 gpm)	500 m³/h (2200 gpm)
Connection Dn	15–50 mm (0.59–1.97 in)	40–80 mm (1.57–3.15 in)	65–150 mm (2.56–5.91 in)	80–200 mm (3.15–7.87 in)	100–300 mm (3.94–11.81 in)
Max. Rotation Speed	3,600				2,800
Max. Particle Size	18 (26)	26 (36)	32 (48)	41 (57)	55 (78)
Feed Screw Pitches Styles	9 standard sizes, adaptations made to order				
Connection Types	To suit process requirements				
Viscosity Range	0.5 to 1 million cP				
Rotation	Clockwise or counter-clockwise				
Max. Temperatures	150°C (302 °F) standard, 220°C (428 °F) special version				
Gasket Materials	FKM, EPDM, HNBR and FFKM				
Mounting	Horizontal (B3) standard, vertical or sideways possible				
Mechanical Seals	Single and double (flushed or pressurized)				

Please note that all technical information is subject to further development of the product range.

FDS NANO CURVE



FDS 1-5 CURVES



THE FRISTAM FDS AT A GLANCE

- Handles extremely high and low viscosities
- Performs across wide temperature ranges
- Gentle, nearly pulsation-free product handling
- Incredible suction and discharge capabilities
- Compact, durable, and long-lasting
- Maximum hygiene with easy CIP/SIP
- Flexible for production and cleaning processes
- Efficient, easy to service, and cost-effective

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