



The cleanest pump  
you will ever need



# The cleanest pump you will ever need



- High suction capability to handle viscous fluids
- Easy to clean pump design certified with:
  - EHEDG Type EL Class I
  - EHEDG Type EL Aseptic Class I
- Uses up to 50% less power than other pump types
- Low shear and zero pulsation
- Self-draining and easy to clean for minimal downtime

Engineers in food and beverage plants are frequently faced with pumping high viscosity products ranging from frozen orange juice, deli salads and bakery produce, to cheese curd and savoury pie fillings.

Certa pumps play an important part in conveying foods safely and without degradation throughout the manufacturing and packaging process, up to 8 million centipoise (cP), and flow rates up to 255,360 litre/hour.

Certa from MasoSine sets even higher pumping standards in food processing. Certa meets the highest standards in hygiene and cleanability while improving process efficiency and minimising total cost of ownership. All this combined with the gentle product handling design of a Sine pump means Certa is the cleanest pump you will ever need.



## Sine pump® advantage

### Gentle pumping with virtually no pulsation

– Ultra low shear pumping of whole foods, meats, dairy and concentrates with no loss to product integrity.

### Superior viscous handling

– Powerful suction up to 0.85 bar. Products with viscosities from 1 cP to 8 million cP can be transferred with ease.

### Simplicity

– Minimal downtime. One shaft, one seal and no timing gears enable easy in-place pump maintenance.

### Interchangeable parts

– Fully interchangeable components between pumps of the same size, reducing spares inventory.

## Sine pump design



A single sinusoidal rotor creates four evenly sized chambers. As each chamber rotates it gently conveys the fluid from the inlet port to the outlet port. At the same time, the opposite chamber opens to draw in more fluid, resulting in a smooth flow with virtually no pulsation.

A gate stops fluid flow from the higher pressure outlet to the low pressure inlet.

# The cleanest pump you will ever need

## Cleaner than any lobe or circumferential piston pump

- EHEDG Type EL Class I and EHEDG Type EL Aseptic Class I
  - The Type EL Aseptic Class I certification that Certa carries applies to closed equipment, wet cleaned-in-place (CIP) without dismantling, steam sterilisable and bacteria tight. All contact parts FDA and EC1935 compliant
- Reduce your CIP cycle and the amount of cleaning agents required
- Reduce chemical and water use and wastewater for disposal
- Modular seal system options:
  - Single mechanical seal
  - Single mechanical seal with flush
  - Double mechanical seal (required for Aseptic applications)

## Lowest cost of ownership

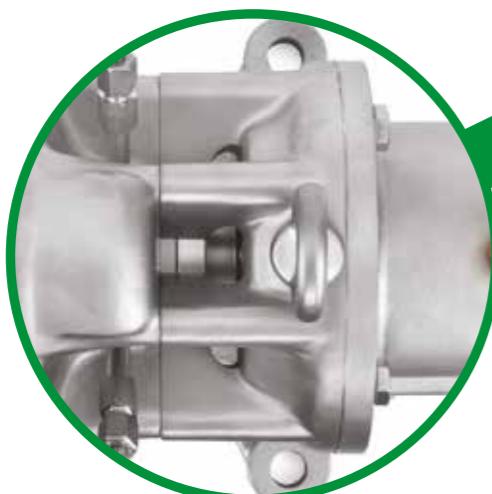
- Extremely simple maintenance performed in-place by a line operative
- Patented design allows bi-directional running to pump duty fluid back to source
- Certa can be included in aseptic processes without the need of additional steam ports due to bacteria tight design proven by EHEDG Type EL Aseptic Class I certification

## Low shear handling for particulates and soft solids

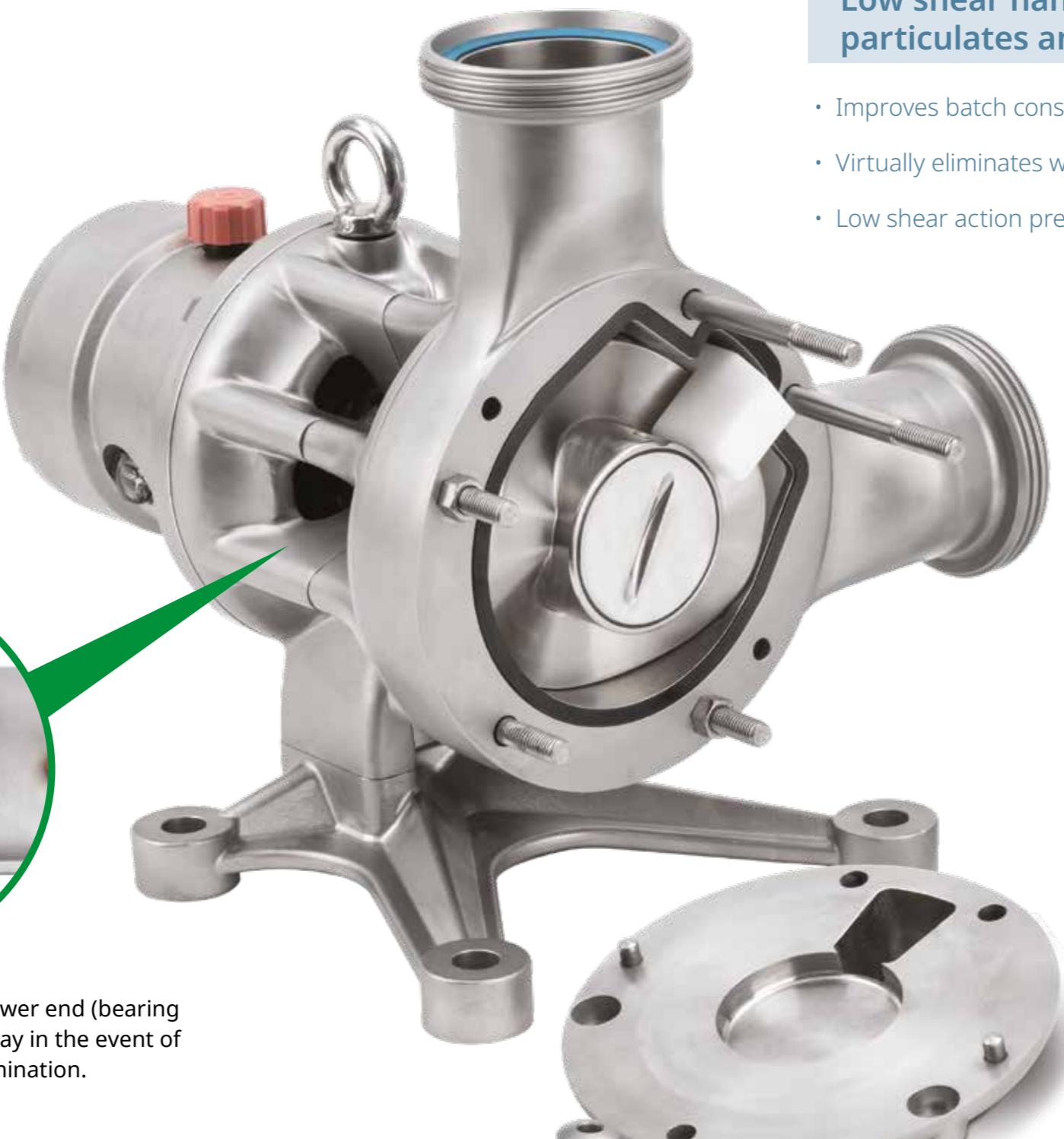
- Improves batch consistency and final product quality
- Virtually eliminates wastage of raw ingredients
- Low shear action prevents aeration and foaming during product transfer

## Virtually pulsation free

- Smooth product flow with no need for ancillary dampeners, ensuring product quality
- Improves flow meter accuracy and heat exchanger efficiency



A space between wet end (pumphead) and power end (bearing housing) of the pump, ensures fluid drains away in the event of a seal failure and eliminates the risk of contamination.



## Energy efficient

- Requires up to 50% less power than lobe or circumferential piston pumps
- Greatly reduced electricity use means reduced carbon footprint
- Higher efficiency at high viscosity increases energy savings in your most difficult applications



## Sustainability curves

MasoSine Energy Efficiency (Mee) curves demonstrate how the sine principle requires less power to operate in viscous applications. The curves demonstrate clearly how MasoSine pumps help organisations achieve greater sustainability.

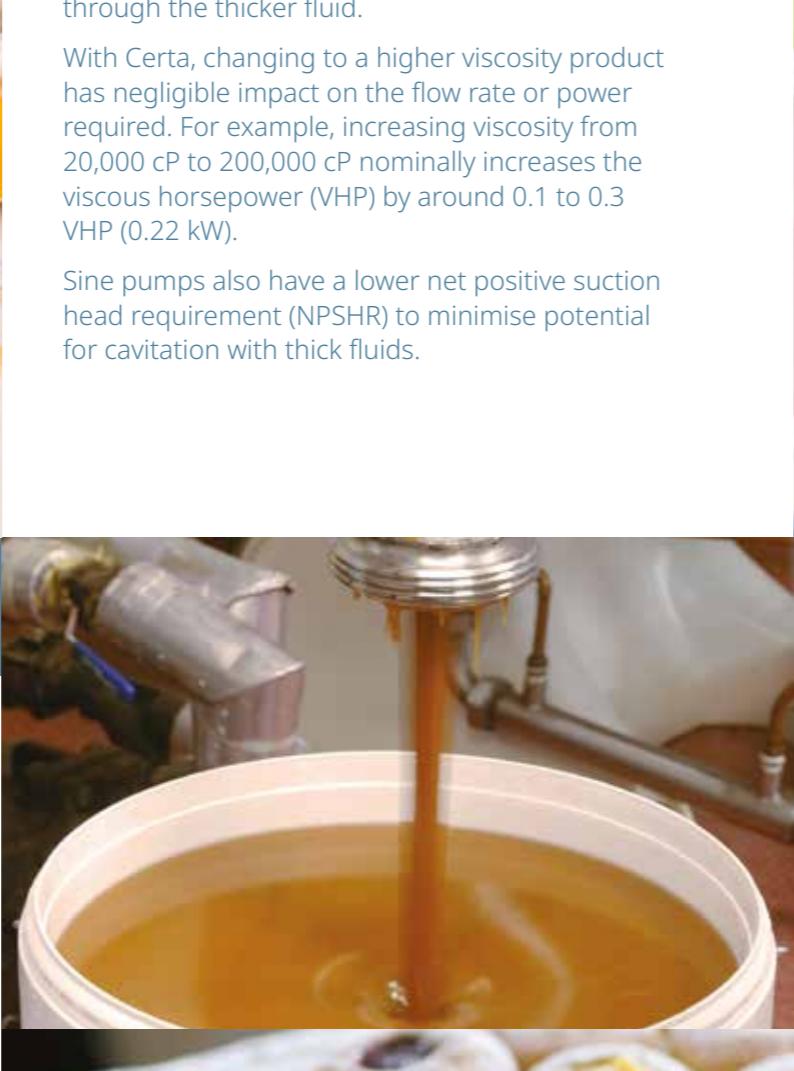
# Applications



## Bakery ›

With demand for fresh bakery products rising globally, bakers are seeking improvements in processing everything from dough and batter, to confectionery fillings and frostings. Competition is fierce and product quality becomes a vital element of sales success.

Viscosities can register in the thousands, or even millions of centipoise, often requiring costly oversizing of lobe and circumferential piston pumps to handle the high viscosity and reduce shear. With superior viscosity performance, Certa pumps play an important part in conveying the ingredients and mixes without degradation throughout the manufacturing and packaging process. Certa's gentle product handling capabilities and low shear improve product quality and appearance.



## ◀ Beverages

Handling fruit juice concentrates with high viscosity can make pumping slow and prone to cavitation. This is especially true if the temperature drops below 0 C, at which point viscosity will make a step increase. When viscosity increases, the maximum running speed of a lobe or circumferential piston pump needs to be reduced considerably to avoid cavitation, so reducing the achievable flow rate. Additionally, power consumption drastically increases as the rotors cut through the thicker fluid.

With Certa, changing to a higher viscosity product has negligible impact on the flow rate or power required. For example, increasing viscosity from 20,000 cP to 200,000 cP nominally increases the viscous horsepower (VHP) by around 0.1 to 0.3 VHP (0.22 kW).

Sine pumps also have a lower net positive suction head requirement (NPSHR) to minimise potential for cavitation with thick fluids.



## Prepared foods and ready meals ›

Within the ready meals manufacturing process, maintaining the integrity of the product is essential. Pumping technologies with a gentle pumping principle ensure the appearance and taste align with the end-user expectations, especially when pumping soft solids like vegetables and meat pieces.

Certa's proven gentle product handling capabilities help to protect product integrity over competitive technologies.

Certa is designed for CIP cleaning to cover the latest requirements regarding hygienic design. For manual cleaning, including COP processes, Certa is offered with an appropriate setup to allow frequent assembly and disassembly that can be carried out even by untrained staff.

## ◀ Dairy

In the cost conscious dairy sector, finding ways to reduce cleaning costs is a major challenge and one which the Certa pump easily solves. Its outstanding gentle pump principle allows customers to handle their delicate products with the care they deserve.

The Certa pump series has full EHEDG Type EL Aseptic Class I certification which allows usage within aseptic processes without the need for additional certification.



# Options and accessories

## Connection ports

Certa pumps are available with all standard ports to match your application including DIN, TC, RJT and SMS. Customised options are available upon request.

## Port orientations

Pumps can be configured with ports in a range of orientations to meet installation requirements, including a self-draining orientation.

## Accessories

A static and dynamic flush system is available to flush the area behind the seal system, at low pressure, to prevent product from hardening and damaging the seal system. This is even possible with a single mechanical seal.

A jacketing system is available to allow pumps to be heated to the optimal temperature for your process.

Priming devices for dry priming are also available.

To support customers with clean out of place (COP) processes, Certa pumps are offered with an ergonomic hinge and O-ring seal system.

- Pump jacketing to maintain the duty fluid temperature
- Static and dynamic flush systems available
- Single mechanical seal or single mechanical seal with flush
- Double mechanical seal, either flushed only or pressurised
- Flush and double mechanical seal can be retrofitted without any modification



Hinge version available to carry the weight of the front cover

# Service and Support



## Service

We believe in providing the highest standard of service to our customers, at every level. We work with them to understand their applications and pressures affecting their business, and provide solutions that are specifically matched to their requirements.



### O-Ring seal:

- Simple design and easy to service
- Developed for frequent dismantling for Clean Out of Place (COP) procedures



### Single mechanical:

- Used within applications that carry out CIP cleaning
- Required for applications that need EHEDG and/or 3-A
- With or without seal flush

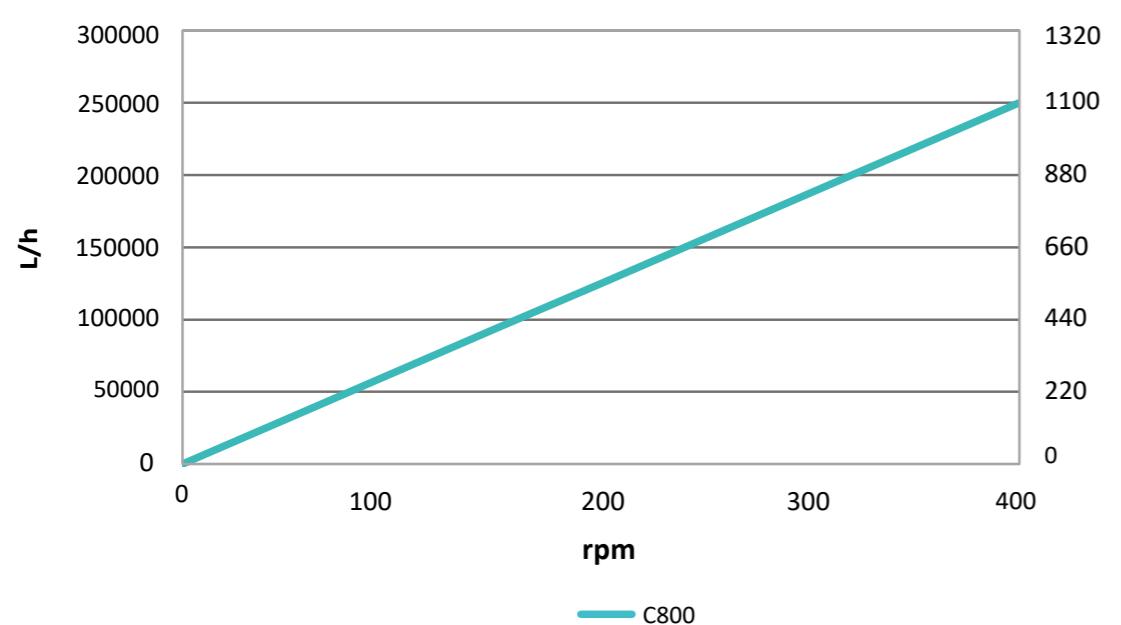
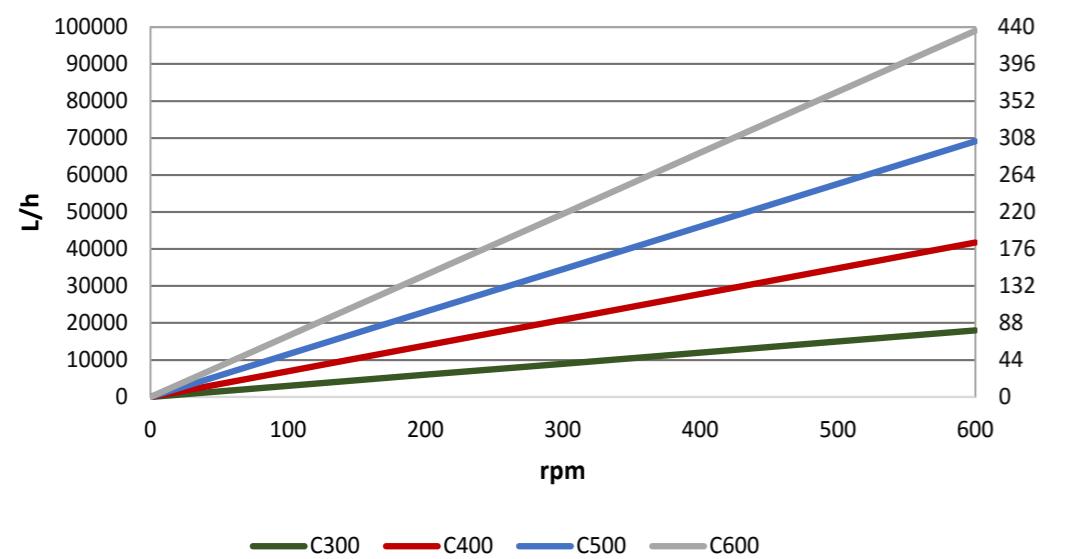
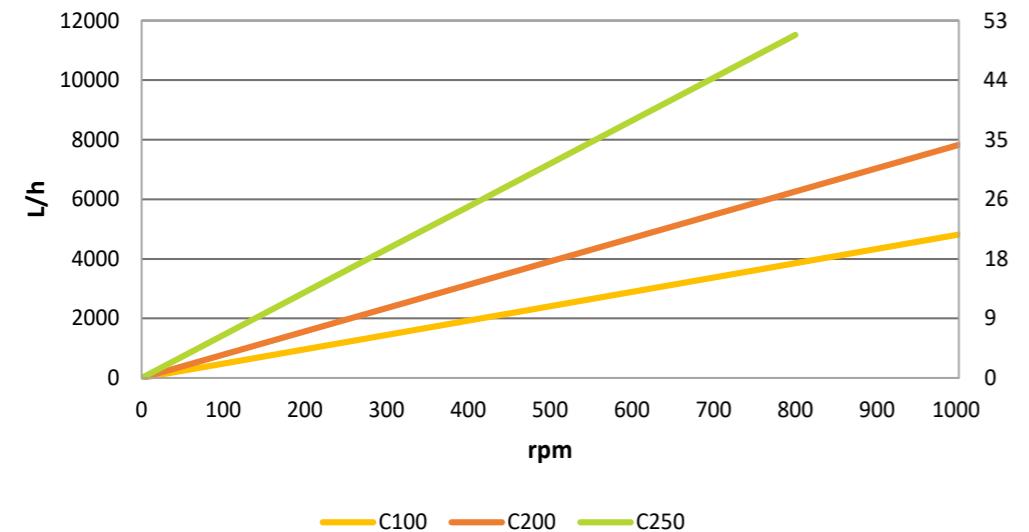


### Double mechanical seal:

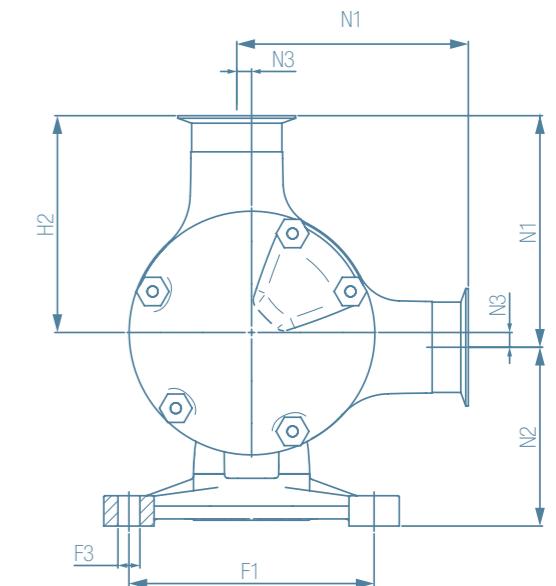
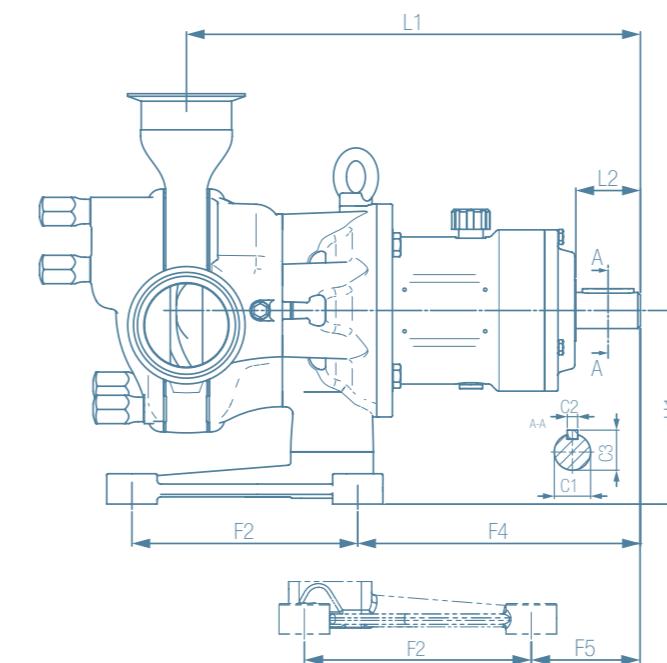
- Required for aseptic applications or challenging liquids
- Either flushed only or pressurised

# Technical data

## Performance curves



## Dimensions



Model	Nozzles			Foot				Length		Height		Coupling			
	N1	N2	N3	F1	F2	F3	F4	F5	L1	L2	H1	H2	C1	C2	C3
	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
Certa 100	139	85	10	120	135	Ø12	143	57	265	50	95	129	Ø28	8	31
Certa 200	155	99.5	10	120	135	Ø12	168	81.5	299	50	110	145	Ø28	8	31
Certa 250	192	139	12	190	175	Ø17	219	84	352	50	150	180	Ø28	8	31
Certa 300	238	153	18	250	215	Ø20	285	154	456	80	170	220	Ø50	14	54
Certa 400	324	169	31	266.5	254	Ø21	301	169	514	77	200	293	Ø50	14	54
Certa 500	327	225	25	320/230	295	Ø26	323	130	564	77	250	302	Ø50	14	54
Certa 600	343	227	28	320/230	295	Ø26	363	169	639	110	255	315	Ø65	18	69
Certa 800	535	367	38	480	500	Ø32	372	72	807	145	405	497	Ø110	28	116

## Technical Data

Model	Maximum particle size	Volume per revolution	Speed	Maximum flow	Maximum pressure	Maximum temperature	Shaft diameter	Shaft height
	mm	litre	rpm	l/h	bar	°C	mm	mm
Certa 100	13	0.08	1000	4,800	10	100	28	95
Certa 200	18	0.13	1000	7,800	10	100	28	109.5
Certa 250	22	0.24	800	11,520	15	100	28	146
Certa 300	30	0.50	600	18,000	15	100	45	150
Certa 400	38	1.16	600	41,760	15	100	50	195
Certa 500	50	1.92	600	69,120	15	100	50	250
Certa 600	60	2.75	600	99,000	15	100	65	255
Certa 800	100	10.64	400	255,360	15	100	110	405



Fluid  
Technology  
Solutions

## FOOD AND BEVERAGE SOLUTIONS



### Watson-Marlow Fluid Technology Solutions

Watson-Marlow Fluid Technology Solutions supports its customers locally through an extensive global network of direct sales operations and distributors

[wmfts.com/global](http://wmfts.com/global)



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