

**certa**  
by MasoSine

EXTENDED  
RANGE OF SIZES



The cleanest pump  
you will ever need



**masosine**  
Process Pumps

# 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 savory 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 434.2 GPM.

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 minimizing 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 12.33 Psi. 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.

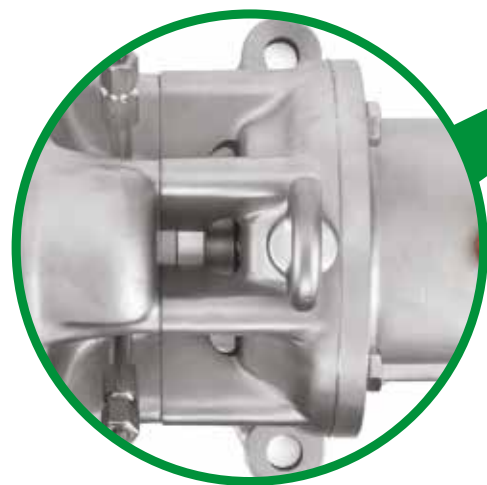
# The cleanest pump you will ever need

## 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 sterilizable 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)

## 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.

## 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 wasting of raw ingredients
- Low shear action prevents aeration and foaming during product transfer

## 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 organizations achieve greater sustainability.



# Applications



## ◀ 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 32°F, 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 minimize potential for cavitation with thick fluids.



## ◀ 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.



## 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.



## Handling particulates and soft solids ▶

When inclusions such as soft fruit, diced vegetables, cooked pulses or meat are present, the Certa pump handles these soft solids without blockages and without causing damage to the ingredients. In testing, Certa pumps showed 50% less product degradation than a similar sized lobe pump.





# Options and accessories

## Connection ports

Certa pumps are available with all standard ports to match your application including DIN, TC, RJT and SMS. Customized 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, for example when pumping chocolate.

Priming devices for dry priming are also available.



# 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.

## Support

Customer support is provided through a network of sine pump specialists and technical support teams. This ensures our customers always benefit from local knowledge and MasoSine pump expertise. No matter where your business operates, MasoSine is never far away.

## Genuine spares

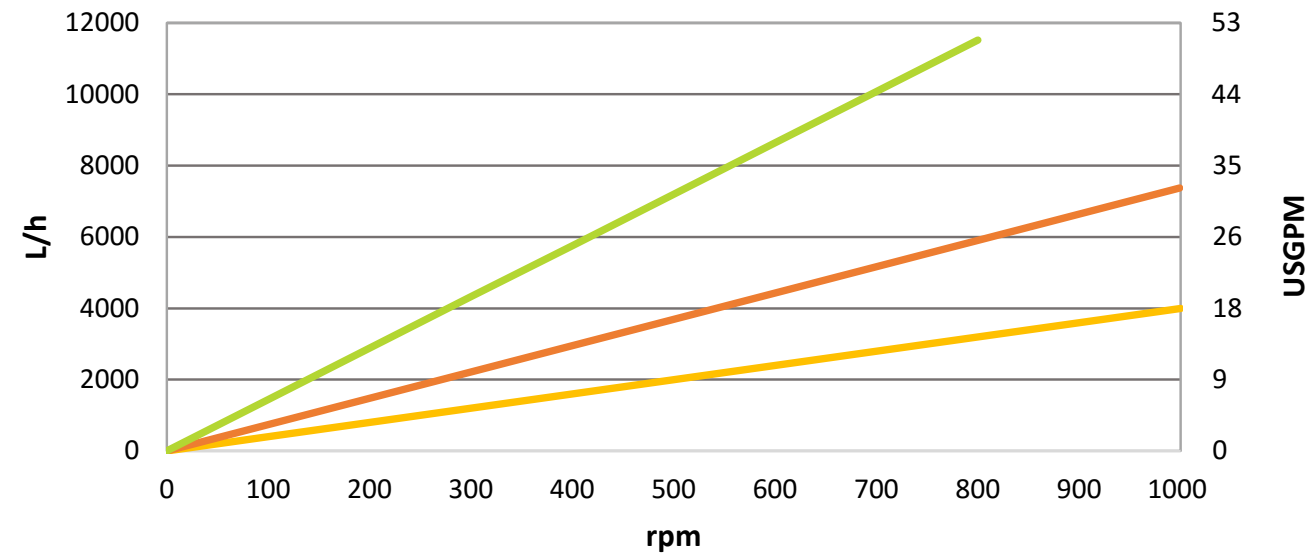
MasoSine's approved parts policy means only the highest quality materials are used in the manufacture of our pumps. This gives our customers confidence that our pumps will not let them down.

Essential spare parts can be dispatched on the day the order is received. Standard pumps can be dispatched within 24 hours.

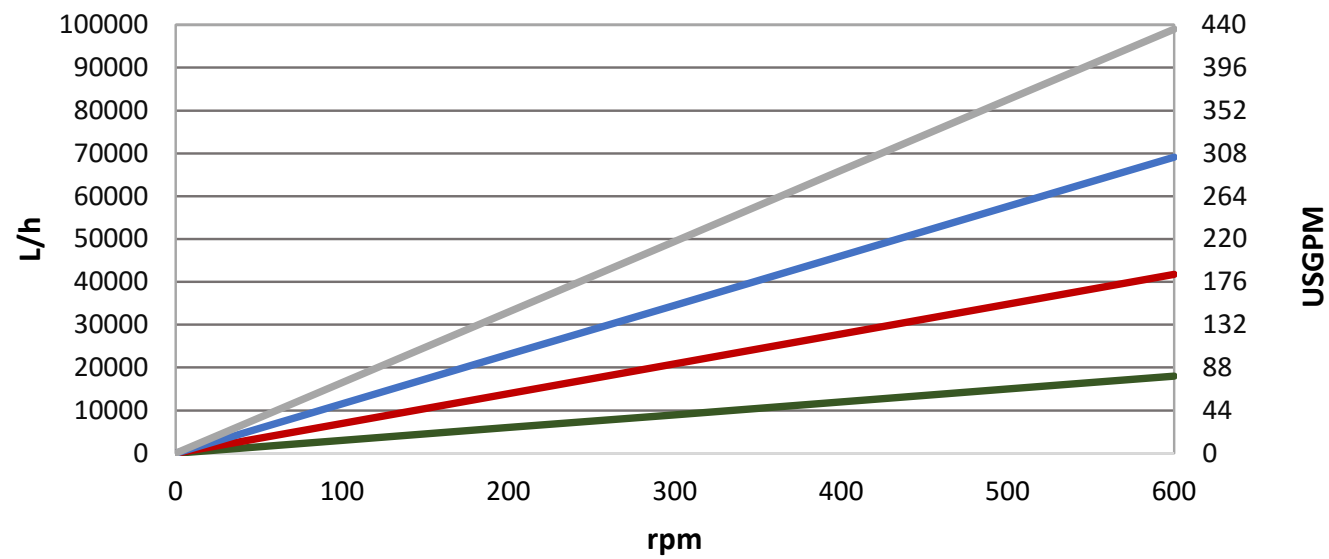


# Technical data

## Performance curves

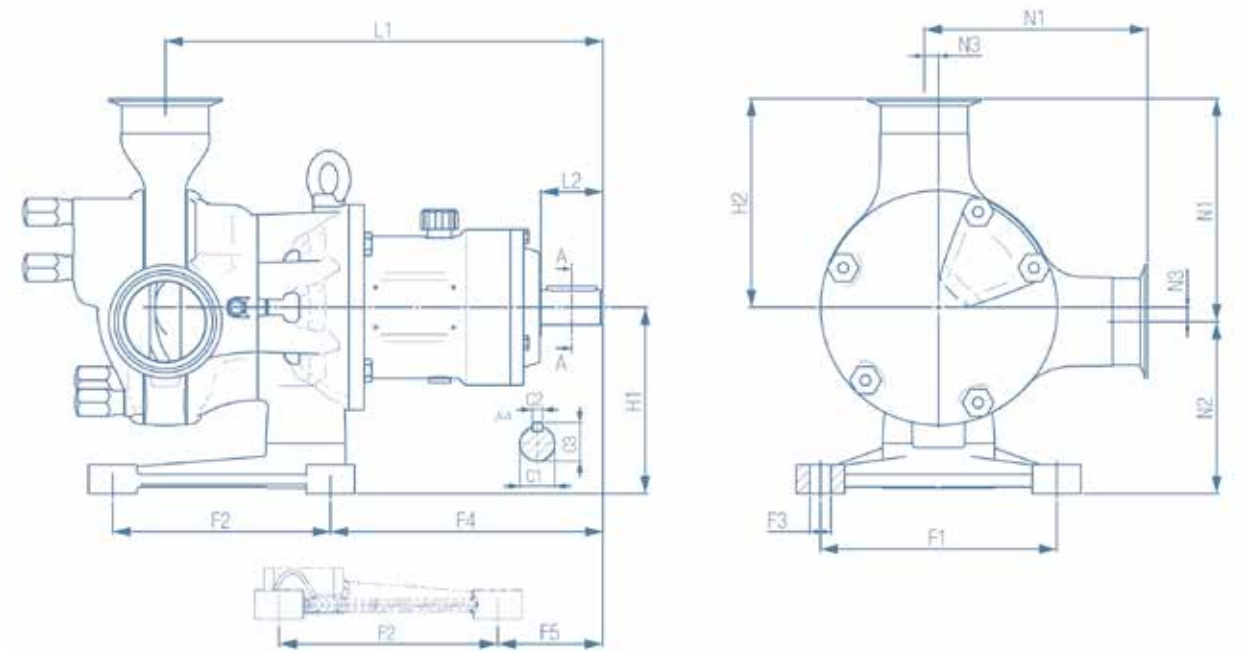


— C100 — C200 — C250



— C300 — C400 — C500 — C600

## Dimensions



Model	Nozzles			Foot					Length		Height		Coupling		
	N1	N2	N3	F1	F2	F3	F4	F5	L1	L2	H1	H2	C1	C2	C3
	inch	inch	inch	inch	inch	inch	inch	inch	inch	inch	inch	inch	inch	inch	inch
Certa 100	5.47	3.35	0.39	4.72	5.31	Ø0.47	5.63	2.24	10.43	1.97	3.74	5.08	Ø1.10	0.31	1.22
Certa 200	6.10	3.92	0.39	4.72	5.31	Ø0.47	6.59	3.21	11.75	1.97	4.31	5.71	Ø1.10	0.31	1.22
Certa 250	7.54	5.45	0.45	7.48	6.89	Ø0.67	8.62	3.31	13.86	1.97	5.91	7.09	Ø1.10	0.31	1.22
Certa 300	9.35	6.00	0.69	9.84	8.46	Ø0.79	11.22	6.06	17.93	3.15	6.69	8.66	Ø1.97	0.55	2.11
Certa 400	12.74	6.65	1.22	10.49	10	Ø0.83	11.83	6.65	20.22	3.03	7.87	11.52	Ø1.97	0.55	2.11
Certa 500	12.85	8.86	0.98	12.6/9.06	11.61	Ø1.02	12.72	5.10	22.20	3.03	9.84	11.87	Ø1.97	0.55	2.11
Certa 600	13.50	8.94	1.10	12.6/9.06	11.61	Ø1.02	14.27	6.65	25.14	4.33	10.04	12.40	Ø2.56	0.71	2.72

## Technical Data

Model	Maximum particle size	Volume per revolution	Speed	Maximum flow	Maximum pressure	Maximum temperature	Shaft diameter	Shaft height
	inch	US gallons	rpm	US gal/min	psi	F	inch	inch
Certa 100	0.51	0.018	1000	18.0	145	212	0.98	3.74
Certa 200	0.71	0.031	1000	31.0	145	212	0.98	4.31
Certa 250	0.87	0.063	800	50.5	217	212	0.98	5.91
Certa 300	1.18	0.132	600	78.9	217	212	1.97	6.69
Certa 400	1.50	0.305	600	183.2	217	212	1.97	7.87
Certa 500	1.97	0.505	600	303.2	217	212	1.97	9.84
Certa 600	2.36	0.724	600	434.2	217	212	2.56	10.04

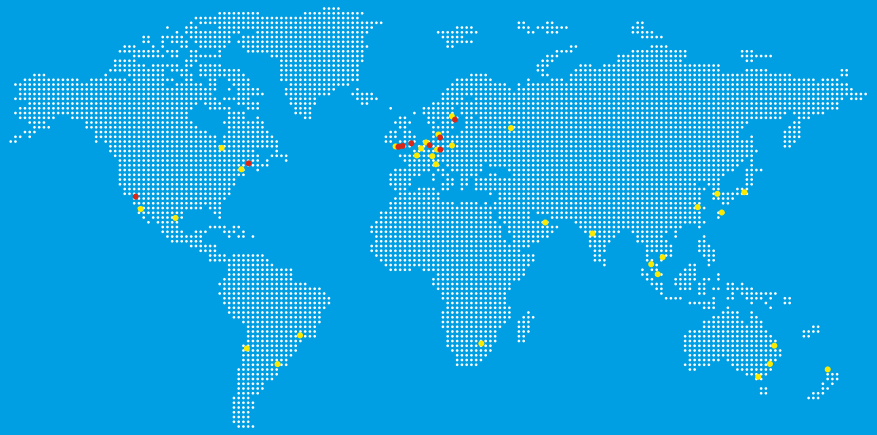


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