

## High pressure pasteurization at 4000 bar

HAMPRO plunger pumps for food processing

FDA certified

Increased productivity

High durability

Low thermal impact

Industrially applicable

All natural process

## High pressure pasteurization

High pressure pasteurization drastically reduces the thermal impact on food, leaving valuable ingredients such as vitamins and natural colors and flavors unchanged.

In contrast to conventional high pressure processes, in which the pressure is transferred to the food via a transfer fluid and a plastic container, the HAMMELMANN pump allows direct compression of liquid foods.

As a result, even high production quantities can be pasteurized with low expenditures on equipment. In addition, the texture of the food can be specifically influenced, which allows the design of new products with modified product properties.

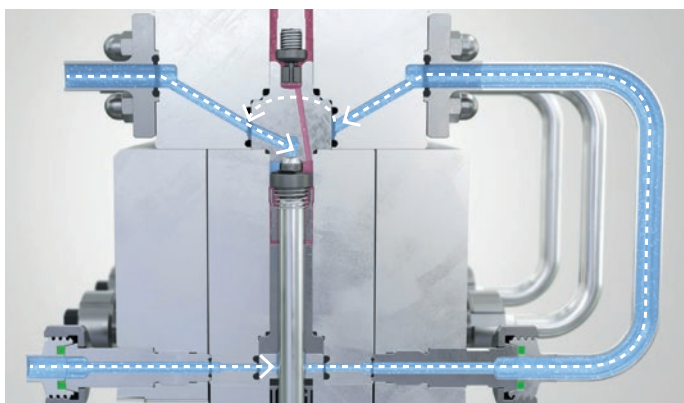
## Performance data HAMPRO series

Type	bar	m <sup>3</sup> /h
HAMPRO 10	3500	0.19
HAMPRO 20	3500	0.19
HAMPRO 40	4000	0.39
HAMPRO 70	4000	0.6
HAMPRO 140	4000	0.8
HAMPRO 200	4000	1.1
HAMPRO 300	4000	1.8
HAMPRO 400	3200	3.9
HAMPRO 500	3000	4.6
HAMPRO 800	3000	7.7
HAMPRO MC	3000	10.7



### High pressure valve

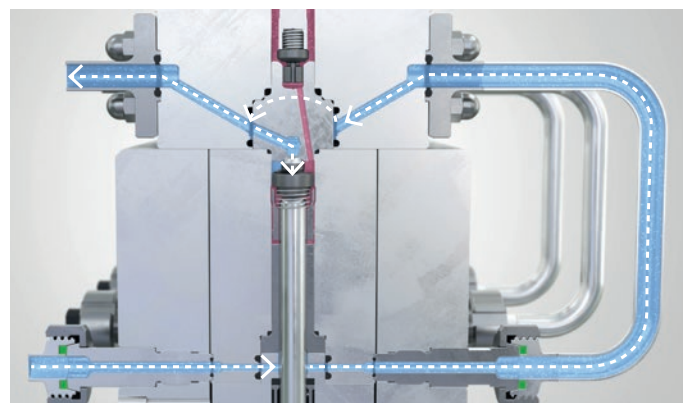
The high pressure valve reduces the pressure and exposes the fluid to high shear forces, which deactivates microorganisms and significantly prolongs the shelf life of the product. The food is homogenized and pasteurized in a single run. Depending on the operating pressure, the temperature at the outlet of the valve is significantly higher than the inlet temperature, so that upstream or downstream cooling of the pumped fluid may be required.



### CIP area 1

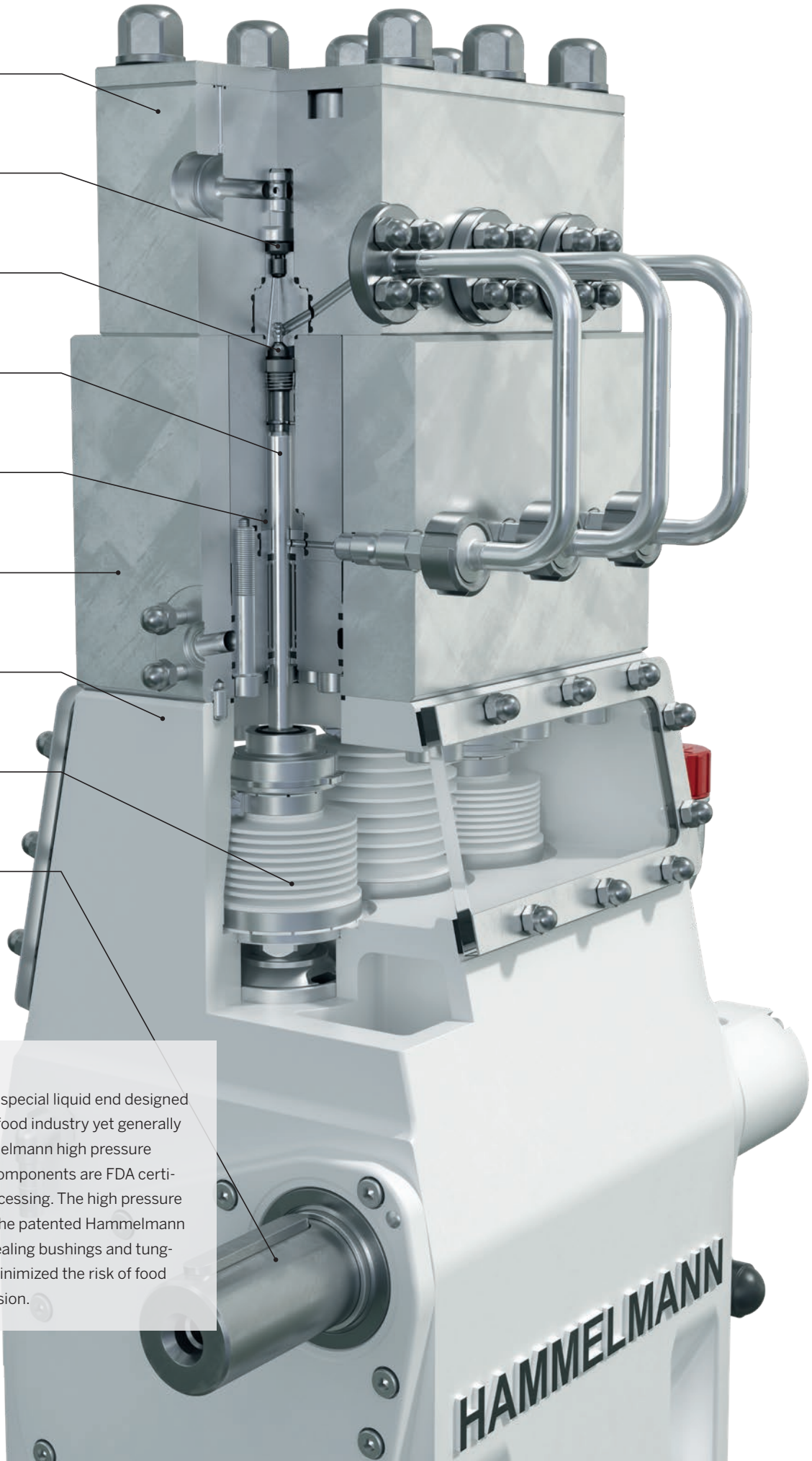
For complete flushing of all areas within the high pressure pump, two cleaning cycles are operated per cleaning agent.

In the first cycle, the cleaning system is connected to both the suction port and the purge port. To reach all dead spots it is required to continuously operate the pump at high pressure and full operating speed during this phase.



### CIP area 2

In the second cleaning cycle, backwashing takes place from the cleaning port to the suction port of the pump. During this cycle, the pump is not operated.



Valve housing

Discharge valve

Suction valve

Plunger

Plunger sealing

Suction chamber

Crank section

Bellows

Pinion shaft

#### High pressure pump

The high pressure pump has a special liquid end designed especially for operation in the food industry yet generally builds on the renowned Hammelmann high pressure technology. All pump wetted components are FDA certified and approved for food processing. The high pressure plunger sealing is effected by the patented Hammelmann sealing system with metallic sealing bushings and tungsten carbide plungers which minimized the risk of food contamination by sealing abrasion.

**HAMMELMANN**



## We are Calder

A team of skilled, dedicated people striving to build the best at our base in Worcester, UK. From design to build, from installation to commissioning, we are there with you from start to finish.



## We Design

In addition to our standard units, we have in-house design teams producing bespoke fluid-handling products from scratch.



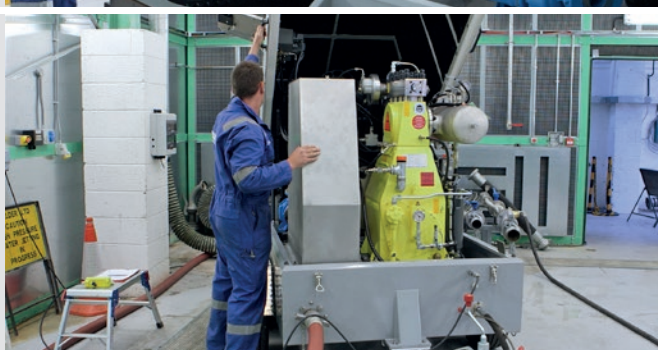
## We Build

Our pump units are built by our own engineers at our factory in Worcester, UK—and they have been for over 30 years.



## We Test

We have two substantial, fully equipped test bays which allows us to ensure all units receive comprehensive testing before despatch. Customer witness testing of unit performance, vibration and noise is available due to our state-of-the-art facilities.



+44 1905 751790  
sales@calder.co.uk  
www.calderltd.com

