Tetra Alex® 20

Homogenizer or high-pressure pump
for liquid food applications

Application

High-pressure homogenization of emulsions and suspensions. Available also as high-pressure pump.
Dairy. Pasteurised milk, UHT milk, cream, yoghurt, condensed milk, ice cream mix, etc.
Beverages. Fruit juices, concentrates, purées, tomato products, etc.
Prepared food. Dressings, ketchups, liquid egg, mayonnaises, sauces, gravies, etc.

Working Principle

The product is pumped under high pressure into the homogenizing device. In the device the product is forced through a small annular gap where the pressure transforms into high velocity. Extreme turbulence and cavitation effectively reduce the size of liquid droplets and solid particles.

Design

Tetra Alex 20 is basically a horizontally mounted 3-piston positive displacement pump with built-in homogenizing device.
Drive system. Power transmission from the motor via V-belts and pulleys through external shaft mounted reduction gearbox.
Crank case. High-quality cast iron housing. All bearings and cross-heads are splash lubricated. Fully immersed oil cooler.
High-pressure pump block. One piece forged stainless steel block with quick change piston seal cartridge system, fully replaceable suction- and discharge valve seats. Pistons of hardened stainless steel and piston seals for working temperatures up to 85°C. Versatile mushroom type valves for production of both low- andhigh viscous products. Closed cooling water system. Pump block is designed for aseptic processing. Pulsation dampers are included. Hygienic heavy duty clamp connections.
A warranty of 5 years on the block against cracking.

Tetra Alex 20

Homogenizing device

Homogenization with hydraulic pressure setting. Wear resistant homogenizing device of Cobalt carbide (stellite). Reversible seat with impact ring for double lifetime, and grindable forcer.

Control system

Hydraulic pressure actuation unit fitted within frame. Hydraulic valves for pressure setting on front panel. Safety valves included. Electrical emergency switch and on/off push buttons. Terminal box. Analogue pressure indication in front panel. Cooling water valve (solenoid).

Housing

Stainless steel covers. Easy-to-open hood for easy service access to product wetted parts.

High-pressure pump

The machine is delivered with an automatically controlled and cleanable line pressure relief valve on the outlet.

Dimensions

Depth, mm: 1 250
Width, mm: 1 300
Height, mm: 1 270
Service area, mm: 3 300 x 2 900
Service height, mm: 1 800

Environment

Consumption data	Non aseptic	Aseptic
Energy consumption/1 000 l product (kWh)	4.6	8.2
Water consumption/1 000 l product (l/h)	28	160
Steam consumption/1 000 l product (kg/h)	N/A	7.75
Noise, dB(A)	73	73

Data based on

- Non aseptic design: pasteurised white milk, 75% of max capacity at 140 bar
- Aseptic design: UHT, white consumption milk, 75% of max capacity at 250 bar
- Noise according to ISO 11203, distance 2 metres

Technical data

Capacity/pressure range

Pressure, bar (psi)	Max, capacity, l/h (gph)
400 (5 800)	2 600 (700)
315 (4 600)	3 400 (900)
250 (3 600)	4 300 (1 130)
200 (2 900)	5 500 (1 450)
160 (2 300)	6 800 (1 790)

Service media

	Non aseptic	Aseptic
Cooling water (>300 kPa (40 psi), max 25°C (77°F), hardness < 10° dH)	145 l/h (38 gph)	515 l/h (136 gph)
Steam (>300 kPa (40 psi), dry and saturated)	-	25 kg/h (55 lbs/h)

Motor size

$$\frac{\text{Capacity l/h (gph) x Pressure bar (psi)}}{30\,600\ (87\,400)} = \text{kW (hp)}$$

Shipping data

No motor	22 kW/30 hp	37 kW/50 hp
1 090 kg	1 235 kg	1 300 kg

Export packing add 350 kg. Shipping volume 5.0 m³.

Optional equipment

- 2nd stage homogenizing device
- Cooling water valve, pneumatic
- Aseptic design
- Wear parts in other design and material adapted to the application
- Various remote control functions
- Machine control equipment
- Noise reduction
- Spare parts kit