



Tetra Alex[®] 25

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, infant formula, 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 25 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- and high 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.

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Homogenizing device

Homogenization with hydraulic pressure setting. The seat with impact ring and the forcer disc are reversible for double lifetime. The wear resistant parts are made of Cobalt carbide (stellite).

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.

Technical data

Capacity/pressure range

| Pressure, bar (psl) | Max, capacity, l/h (gph) |
|---------------------|--------------------------|
| 400 (5 800) | 5 000 (1 320) |
| 315 (4 600) | 6 200 (1 650) |
| 250 (3 600) | 8 000 (2 110) |
| 200 (2 900) | 10 000 (2 630) |
| 160 (2 300) | 12 600 (3 340) |

Service media

| | Non aseptic | Aseptic |
|--|------------------|--------------------|
| Cooling water (>300 kPa (40 psi), max 25°C (77°F) hardness < 10° dH) | 220 l/h (58 gph) | 585 l/h (155 gph) |
| Steam (>300 kPa (40 psi), dry and saturated) | - | 25 kg/h (55 lbs/h) |

Motor size

Capacity l/h (gph) x Pressure bar (psi)
----- = kW (hp)
30 600 (87 400)

Dimensions

Depth, mm: 1 410
Width, mm: 2 240
Height, mm: 1 080
Service area, mm: 3 900 x 3 000
Service height, mm: 1 5000

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) | 17 | 73 |
| Possible cooling water to recirculate (% of total) | 57 | 100 |
| Steam consumption /1 000 l product (kg/h) | N/A | 3.1 |
| Noise, dB (A) | 77 | 77 |
| Carbon footprint, /1,000 l product (kg CO2) | 2.3 | 4.5 |

Data based on

- Non aseptic design: pasteurised white milk, at max capacity, 140 bar.
- Aseptic design: UHT, white consumption milk, at max capacity, 250 bar.
- Noise according to ISO11203, distance 2 metres
- CO₂ emissions are based on electricity production generating 0.5 kg CO₂/kWh (world average), and steam production from natural gas.

Shipping data

| No motor | 45 kW/60 hp | 75 kW/100 hp |
|----------|-------------|--------------|
| 1 695 | 1 925 | 2 285 |

Export packing add 500 kg. Shipping volume 9.2 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