Tetra Alex® 350

Homogenizer or high-pressure pumpfor 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 350 is basically a horizontally mounted 5-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. Forced lubrication circuits for gearbox and crankhouse with filter and oil coolers.

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 temperature up to 85°C. Mushroom valves. Closed cooling water system. The 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 350

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

The hydraulic pressure actuation unit is fitted within the frame, safety valves are included. Hydraulic valves for pressure setting and analogue pressure indication are placed on the side panel as well as on/off push buttons and emergency switch. A terminal box is included. The cooling water valve (solenoid) is actuated with the drive motor. HL/LL transmitters for oil level in the crank case. High temperature transmitters for oil in crank case and gearbox. Low pressure transmitter for oil in the crank case and high pressure transmitter for clogged filter for the crank case oil.

Housing

Stainless steel covers. Easy-to-open hood and side door for easy service access to product wetted parts. Back hood for inspection and service of drive end.

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 (psi)	Max, capacity, l/h (gph)
400 (5 800)	14 000 (3 700)
315 (4 600)	17 400 (4 620)
250 (3 600)	21 600 (5 730)
200 (2 900)	27 800 (7 360)
160 (2 300)	34 700 (9 180)

Service media

	Non aseptic	Aseptic
Cooling water (>300 kPa (40 psi), max 25°C (77°F) hardness < 10° dH)	460 l/h (125 gph)	1 050 l/h (280 gph)
Steam (>300 kPa (40 psi), dry and saturated)	-	50 kg/h (110 lbs/h)

Motor size

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

Dimensions

Depth, mm: 2 075
Width, mm: 1 950
Height, mm: 2 050
Service area, mm: 4 500 x 4 000
Service height, mm: 3 000

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)	13	49
Possible cooling water to recirculate (% of total)	57	100
Steam consumption /1 000 l product (kg/h)	N/A	2.3
Noise, dB (A)	78	78
Carbon footprint, /1,000 l product (kg CO2)	2.3	4.4

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 ISO 11203, distance 2 metres
- CO_2 emissions are based on electricity production generating 0.5 kg CO_2/kWh (world average), and steam production from natural gas.

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
- Automatic cooling water regulation
- Alarm panel
- Noise reduction
- Spare parts kit

Shipping data

No motor	160 kW/210hp	200 kW/250 hp
4 500 kg	5 350 kg	5 600 kg

Export packing add 800 kg. Shipping volume 15.5 m³.

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