



Tetra Pak® Homogenizer 30G

Homogenizer or high-pressure pump for liquid food applications



Highlights

- Maximum capacity 18 900 l/h
- High homogenization efficiency
– for high product quality and low cost
- High homogenizer uptime
- Turnable parts – low maintenance and spare parts costs
- Handles a wide range of products

Application

The Tetra Pak® Homogenizer 30G handles high-pressure homogenization of low to high viscous, aseptic and non-aseptic emulsions and suspensions, including pasteurized milk, UHT milk, cream, yoghurt, condensed milk, ice cream mix, fruit juices, concentrates, purees, tomato preparations, dressings, mayonnaise, sauces and gravies. It is also available as a high-pressure pump for feeding a spray dryer when producing powder, for example.

Working principle

The product enters the machine through the inlet pipe. The pistons pressurize the product at the homogenizing

pressure. The high pressure pushes the product through the small annular gap of the homogenizing device. The pressure is transformed into high velocity, generating extreme turbulence and cavitation, which reduces the size of the liquid droplets and solid particles in the product. The product then exits through the outlet pipe.

Design

The Tetra Pak Homogenizer 30G is a horizontally mounted 3-piston positive displacement pump with a built-in HD 100 homogenizing device. The seat and forcer disc are reversible for double the lifetime. The wear-resistant parts are made of cobalt carbide.

The unit features a high-pressure pump block of one piece forged stainless steel, designed for both aseptic and non-aseptic processing, with a quick-change piston-seal cartridge system, and fully replaceable suction and discharge valve seats. An efficient serial cooling water system offers low water consumption. The block is backed by a 10-year warranty against cracking.

As a high-pressure pump the machine is delivered with an automatic line pressure relief valve (LPRV), a hydraulically operated valve that protects the line after the homogenizer from overly high pressures.

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Technical features

- HD 100 homogenizing device with hydraulic pressure setting for stable pressure (HD 100 not included when the unit is supplied as high pressure pump only)
- Turnable parts – doubles the lifetime of homogenizing device, valves and seats
- Splash-lubricated crankcase made in high-quality cast-iron
- One piece forged pump block – hygienic and durable with ten year warranty against cracks
- Pulsation dampers and hygienic, heavy-duty clamp connections
- Floating piston connection – self aligning
- Serial piston cooling circuit – low water consumption
- Premium efficiency IE3 electrical motor

Options

- Second stage homogenizing device – mounted after the first, to improve the homogenization effect
- Aseptic version – piston seals and dampers adapted for aseptic use, aseptic condensers for steam production, automated valve for changing from steam to water during CIP standard for aseptic machines
- Pneumatic cooling water valve – less temperature sensitive than standard electrical valves
- Various remote control functions – for controlling homogenizing pressure from remote locations
- Machine control equipment – optimizes cooling water to crankcase, and monitors inlet pressure and oil level in the crankcase
- Noise reduction – further reduction by up to 4 dB
- Spare parts kit – one set with the most common spares, such as seals and pistons
- Wear parts – key wear parts available in a wide selection of designs and materials adapted to your applications

Motor size

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

Technical data

Capacity/pressure range

Pressure, bar (psi)	Max capacity l/h (gph)
160 (2 300)	18 900 (4 990)
200 (2 900)	15 000 (3 960)
250 (3 600)	11 800 (3 110)
315 (4 600)	9 300 (2 450)
400 (5 800)	7 500 (1 980)

Service media

	Non-aseptic*	Aseptic
Cooling water (>300 kPa [40 psi], max 25°C [77°F], hardness < 10° dH)	340 l/h (89 gph)	740 l/h (195 gph)
Steam (>300 kPa [40 psi], dry and saturated)	-	25 kg/h (55 lbs/h)

* Cooling water can cut to 90 l/h (23 gph) for non-aseptic applications, if recycle unit is available.

Environment

Consumption data	Non-aseptic	Aseptic
Energy consumption/1 000 litres product (kWh)	4.6	8.2
Water consumption/1 000 litres product (l/h)	37	99
Possible cooling water to recirculate (% of total)	74	34
Steam consumption/1 000 litres product (kg/h)	N/A	3.3
Noise, dB (A)	77	77
Carbon footprint/1 000 litres product (kg CO ₂)	2.3	5.1

Data based on

Non aseptic design: pasteurized white milk, 75% of max capacity at 140 bar
Aseptic design: UHT, white consumption milk, 75% of max capacity at 250 bar
 CO₂ emissions are based on electricity production generating 0.5 kg CO₂/kWh (world average), and steam production from natural gas.

Shipping data

Motor type	Net weight, kg
No motor	2 855
90 kW/120 hp	3 485
132 kW/175 hp	3 780

Dimensions	mm
Depth (mm)	1 720
Width (mm)	2 680
Height (mm)	1 250
Service area (mm)	4 300 x 3 300
Service height (mm)	1 700

Export packaging: add 500 kg. Shipping volume: 11.9 m³