Tetra Pak® High Shear Mixer

Batch unit in recirculation B200-300R

Application

The Tetra Pak® High Shear Mixer provides high-shear mixing of both high and low viscosity products, dissolving powder stabilisers, such as pectin, gums, and sweeteners. The efficient mixing system produces homogeneous and lump-free products, ready for further processing into for example sweetened condensed milk, high solids infant formula slurries and tube feeds.

Highlights

- Handles high and low viscosity products
- Low raw material losses
- Low maintenance
- Energy efficient

Working principle

The main component is a mixing tank with a bottom-mounted mixing unit. The mixing unit has a rotor and perforated stator to ensure optimal wetting and processing.

The rotor draws the ingredients into the mixing head and pushes them out through the holes in the stator. During this process, the impeller at the bottom of the rotor subjects the product to the desired shear. This rotor/stator design ensures optimal mixing, even particle distribution and consistent high quality. A preset amount of cold or pre-heated liquid is fed into the mixing tank. Powders and dry ingredients are added manually through the manhole. The raw materials are mixed into a homogenous product. This mixer is set up to circulate over a buffer tank. The product is pumped from the mixer tank to the buffer tank. The automatic level control maintains an optimum level in the mixer, optimizing the rate of powder addition and securing efficient mixing.

Basic unit product model

Main components

- Mixing vessel
- Round manway cover with grill and safety switch
- CIP
- High-shear mixing unit with water-flushed seal
- Control panel with:
    - Speed control for the mixing unit
    - Start/stop of inlet pump
    - Start/stop of outlet pump
    - Emergency stop/reset
    - Main switch

Materials

All parts in contact with the product are made from stainless steel AISI 316L. Other parts are made from AISI 304.

Options

- Inlet pump

Technical Data

Processing parameters	B200-300R
Electricity 380-480 V, 50/60 Hz, kW	22.5/27
Capacity, l/h	300-1200
Seal water l/h	20
Instrument air, Nl/min	100
Number batches, h	1-4
Typical output capacity (recirculation), l/h	≤15 000
Typical capacity recirculation, l/h	≤20 000
Dry matter, %	≤ 80
Viscosity (reciculation), cP	≤ 500
Mixing temperature	≤ 90°C
Oil addition rate, kg/min	≤ 50
Powder*, kg/min	≤ 100

* All product capacities depend on viscosity and circulation flow. The amount of powder added depends on the type and quality of the powder. Milk powder, flavour, sugar, emulsifiers and stablisers.