



Tetra Pak[®] High Volume Batch Mixer

Fast, clean, cost-efficient big bag unloading and dissolving.



Application

The Tetra Pak[®] High Volume Batch Mixer is a solution for dissolving and mixing powders packed in big bags such as sugar, dextrose or citric acid up to a batch viscosity of 200 cP. It includes the Tetra Pak[®] Big Bag Liquefier which enables easy big bag unloading and handles difficult, lump-prone powder ingredients without requiring any lump-breaking or grinding. The mixing tank of the Tetra Pak High Volume Batch Mixer is available in 5, 10 and 15 m³ and other sizes on request. For products or recipe steps requiring heating, the unit can be equipped with an optional tubular heat exchanger, which can reduce production time by dissolving the ingredient in water even faster.

Highlights

- Fast, efficient big bag unloading
- No need for maintenance, intense lump-breaking or grinding equipment
- Dump lumpy ingredients directly into liquid without risk of clogging
- Fully automatic cleanable wet interior, no residual powder carried over during dry product change
- Our unique dust Extraction and Recovery System (ERS) collects and recovers powder into product for ergonomic work environment and no product loss
- Less equipment – single pump for mixing, dust extraction, product transfer and CIP return
- Efficient and flexible mixing with radial jet mixer technology
- Continuous integrated brix control for real time values
- Patented injector technology for straightforward liquid and powdered ingredients aspiration from liquefier tank
- Various batch sizes available

Working principle

The Tetra Pak High Volume Batch Mixer is equipped with two tanks: The mixing and the liquefier tank. The operator places big bags above the Tetra Pak Big Bag Liquefier with a crane or industrial forklift truck, and empties the entire contents of the big bag into the liquefier tank. After an initial water charge, sugar, citric acid, dextrose and other bulk powders packed in big bags are added into the liquefier tank, using the full size of the big bag outlet thanks to the unrestricted opening of the liquefier tank. An integrated dust extraction system and water shower prevent combustible dust to exceed the dumping area and with that eliminate product loss and contamination of the surrounding atmosphere during big bag unloading.

A recirculation loop maintains continuous product exchange between the mixing tank and the liquefier tank. Once powders have passed a pre-dissolving and separation process in the liquefier tank, they are aspirated by the injector and conveyed into the mixing tank for final dissolving. A Radial Jet Mixer in the bottom of the mixing tank ensures continuous agitation. Once all powders are in solution, the mix is ready to be forwarded for further processing.

The main liquefier functionalities are operated using physical push buttons next to the operator platform. The hygienic design allows all components to be fully cleaned during CIP and reduces the risk of microbiological issues or cross-contamination.

Control cabinet and control panel

The Tetra Pak High Volume Batch Mixer is controlled by a Tetra Pak® PlantMaster PLC fitted in a control cabinet located on the main module. Optionally, the control cabinet can be equipped with an HMI screen for local control of the machine. We can deliver the PLC with Siemens or Rockwell code.

Main components

- 2 000 litre liquefier tank
- 5 000 to 15 000 litre mixing tank
- Radial jet mixers
- Injector with mixing device
- Water shower
- Dust extraction system
- Recirculation pump
- Set of manual and pneumatic valves
- Flow meter
- Inline continuous brix measurement
- Tubular heat exchanger (optional)

Technical data

The Tetra Pak High Volume Batch Mixer is available in three tank sizes: 5 000, 10 000, and 15 000 litres.

The ingredients must have good solubility in water, must not float, nor have any thickening or stabilising properties

Max. batch viscosity	200 cP
Electrical power (installed)*	22 kW (400 V, 50 Hz)
Required water supply	25 000 l/h at 300 kPa (3 bar)
Steam**	400 – 800 kg/h at 300 kPa (3 bar)
Compressed air	380 NI/h at 600 kPa (6 bar)
2 x Steam-regulating valves	200 NI/h at 600 kPa (6 bar)
Control panel	180 NI/h at 600 kPa (6 bar)
Max. outlet pressure	300 kPa (3 bar)

* Other supply voltage and frequency upon request.

** For optional heater in recirculation loop. Steam flow depending on chosen ΔT



Example layout

Measurements on request.

Height: 3 488 mm is the height of the unit. The bar to lift big bags in: 2 990 mm.

Estimated free space required for lifting big bags above the bar: 2 100 to 3 500 mm (midi/maxi, depending on lifting device).

The units are pre-assembled, partially frame-mounted and pre-cabled. The tanks ship disconnected from the frame.

Options

For products or recipe steps requiring heating, the Tetra Pak High Volume Batch Mixer can be equipped with an optional tubular heat exchanger. Depending on the ingredients, process times can be shortened thanks to more efficient dissolving of ingredients in water.



Tetra Pak® Big Bag Liquefier

Also available as standalone unit
(to an existing recirculation loop).