



Tetra Pak[®] Drum Unloader

Efficient drum emptying for a wide range of liquid ingredients



Application

Tetra Pak[®] Drum Unloader is a highly flexible unit designed to unload concentrate drums up to 200 litres in volume into a downstream system. It can be used for various liquid ingredients like fruit concentrates, oat slurries, pastes, juices, flavours or any similar ingredient type.

Highlights

- Water injection technology facilitates the use of small hose dimensions for high viscosities.
- Weight supporting system guarantees ergonomic hose handling at lowest investment cost.
- Patented suction check valve allows drums to be emptied at ground level preventing liquid back-flow.
- Compact design facilitates wide operating area.

Working principle

Tetra Pak Drum Unloader is based on a powerful diaphragm or twin-screw pump that is coupled with a stainless-steel suction lance, fulfilling the highest hygienic demands and which is equipped with various advanced technologies.

A patented suction check valve provides a balance between air and liquid intake at all times. This provides continuous suction flow even at lower liquid level. While stored at a standby dock, the suction lance is fully integrated into the cleaning cycles.

A smart water injection system enables even concentrates up to 30 000 cP to be conveyed without the operator carrying heavy and inflexible hoses. The unit is able to aspirate from drums located with a maximum distance of 2 metres between the drum and the unit.

Main components

- Pneumatic diaphragm or twin-screw pump including air supply equipment
- Suction lance including hoses
- Set of pneumatic valves
- Magnetic flow meter for monitoring water consumption
- Water gun connected to water supply
- CIP and standby dock for suction lance

Consumption data

Compressed air

Diaphragm pump for DN 50	1500 NI/min at 6 bars
Diaphragm pump for DN 65	1800 NI/min at 6 bars
Valves	180 NI/h at 6 bars

Electricity

Panel	400 V 50 Hz
Other supply voltage or frequency possible	
Twin-screw pump for DN 50	5.5 kW
Twin-screw pump for DN 65	11 kW

Control panel

Tetra Pak® Drum Unloader is controlled by push buttons to operate the main functions of the unit.

As an option the unit can be equipped with Tetra Pak® PlantMaster and an optional touchscreen which allows the operator to always have full control of the status of the unit and to interact with it via the screen.

Pump options

Pneumatic pump

- Low investment cost
- Low maintenance requirements
- 100 % self priming
- Pulsating flow

Twin-screw pump

- Higher investment cost
- Higher maintenance requirements
- Water priming of pump required
- Continuous flow

Technical data

All product contact parts made of polished AISI 316L and support frame is made of AISI 304L.
Surface Ra: 1.6 µm.

Important: the maximum counterpressure after the machine must not exceed 3 bar.

DN 65 (figures without water injection)

Viscosity	Feeding capacity, l/h
1 cP	18 000
5 cP	17 625
50 cP	17 150
100 cP	16 000
200 cP	15 000
500 cP	12 150
1 000 cP	7 600
2 000 cP	4 400
2 500 cP	3 640
3 000 cP	3 130
5 000 cP	2 030
6 000 cP	1 700
8 000 cP	1 300
10 000 cP	1 050

DN 50 (figures without water injection)

Viscosity	Feeding capacity, l/h
1 cP	12 000
5 cP	11 750
50 cP	9 800
100 cP	8 000
200 cP	6 000
500 cP	4 000
1 000 cP	2 500
2 000 cP	1 450
2 500 cP	1 200
3 000 cP	1 030
5 000 cP	670
6 000 cP	560
8 000 cP	430
10 000 cP	350

Remark: the water injection technology can improve the capacity significantly.

Example for a fruit concentrate*

10 000 cP (no water injection)	~ 2000 l/h
10 000 cP > 3600 cP (12 % water injection, 720 l/h)	~ 6000 l/h

* Please note: The decrease in viscosity can vary depending on the characteristics of the ingredients. Please contact LFS for individual cases.



Patented suction check valve

For controlled air intake and no pressure loss with the smallest possible diameter of the lance: only 66 mm in diameter.