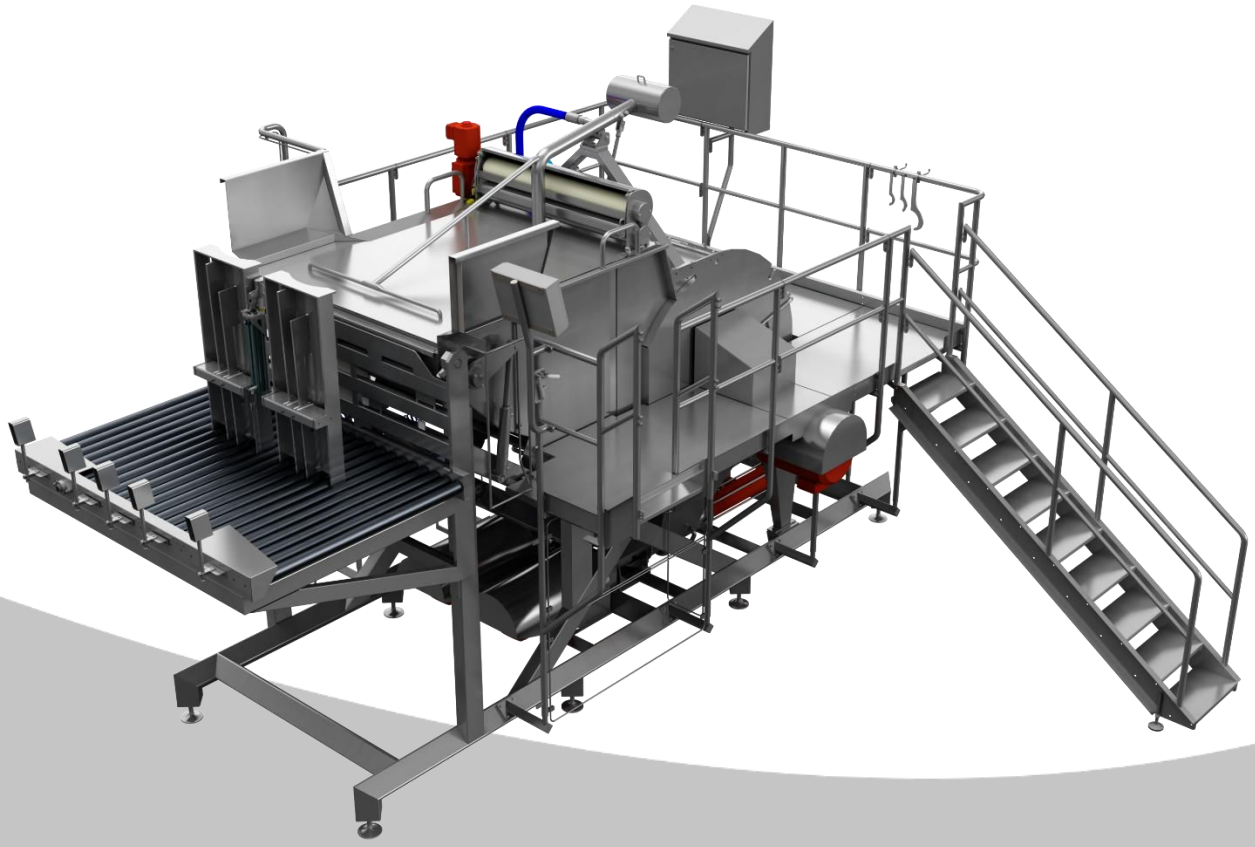
MACHINE SPECIFICATION

TOTE BIN DUMPER ICE CRUSHER
TBDICS



Machine name	TBDICS	Manufacturer	Fluidor Equipment B.V.
Publication date	03-03-2026	Address	Ramgatseweg 25, 4941VN Raamsdonksveer, The Netherlands
Version	0.2	Telephone	+31(0)162 581 450

DESCRIPTION

The Tote-Bin-Dumper-Ice-Crusher (TBDICS) is designed for efficient emptying of open-top drums or bins containing products such as (hard frozen) fruit juices and fruit juice concentrates. Per dumping cycle, two drums can be emptied. Hard frozen products in drums need to be pre-thawed until the frozen product block is free from the liner and the drum. The drums and bins are placed on the driven pallet roller conveyor system where the lids are removed and liners are opened. After opening, the drums and bins are transported into the holder of the TBDICS, which can handle different package types.
The drums and bins are clamped and lifted by stainless steel hydraulic cylinders and emptied into the hopper. The hydraulically operated grid is opened for frozen product and closed for liquid products in bags. The operator feeds the bottom part of the liner into the squeezer and the remaining product is squeezed out, reducing product loss.
Frozen products cannot be squeezed directly after dumping, because the liner is wrapped around the drum and becomes clamped inside the drum holder during lifting.
When dumping hard frozen products, the electric-driven crusher with pins crushes the product into flakes. At the heated bottom of the hopper, the driven screw conveyor pushes the product into the twin-screw product pump. After production, the CIP cover can be closed and the twin screw can be used as a CIP circulation pump.

DESIGN SPECIFICATION

- According actual CE-regulations
- Developed and built according quality system ISO 9001
- Clean design according actual EN1672-2 and HACCP-regulations
- Food contact materials according EC 1935/2004 and FDA
- Good Manufacturing Practice Regulation (EC) 2023/2006
- Components according Fluidor standard components list
- Machine prepared for integration into existing CIP-system (CIP covers included)
- Machine control by HMI
- Control cabinet IP55 / NEMA 12 (VX25,various sizes, AISI 304)
- Module for remote internet access
- Construction + product parts AISI304
- Hygienic stainless steel hopper with hydraulic dumping grid and integrated level detection
- Piping parts AISI 316
- Operator platform along right hand and left hand side of the machine
- Pneumatic clamp device for 2 drum and Bins with additional clamp for carton bins and hydraulic stainless steel AISI 304 lifting cylinders
- Electric driven crusher equipped with pins horizontally placed in hopper, suitable for deep frozen liquids, cells and liquids containing ice crystals
- Electric driven bag squeezer with finger protection, hygienic design, consisting out of knurled AISI 316 lower roller and natural rubber upper roller, assembled in 2 AISI316-side plates with lifetime lubricated closed bearings, IP66 electric drive without cooling fan
  Product loss < 0,1%, with foot operated reverse drive for safe operation
- Frequency controlled twin screw product pump with seal flush and pressure relief valve set on 12 bar
- Pressure transmitter behind the pump
- Height roller conveyor system 955 mm
- CIP supply can optionally be supplied with a mix-proof valve.
- Machine is designed to be used 12 hours a day 5 days a week and 52 weeks a year with proper maintenance and an expected service life of 20 years

REQUIREMENTS

- Layout (dimensional, utility & requirements drawing) available upon request
- Earthquake area extra fixation needed (Anchors option)
- Machine is designed for indoor use in a medium hygiene wet area

TECHNICAL DATA	EU	USA
Total weight empty	: 7500 kg	16530 lbs
Total weight Full	: 11200 kg	24690 lbs
Product / CIP temp	: -20, +90 C° max 60 minutes	-4, 194 ˚F max 60 minutes
Ambient temperature	: 5 - 25 °C	41 - 77 ˚F
Relative humidity	: 30 - 70%	
Noise level	: < 85 dB(A).	
IP value (control cabinets + drives)	: IP55	
Product hopper volume	: 3700 L	977 gal
Pump particle size max	: 32 mm	1.26 inch
Adjustable machine support legs	: 80 -160 mm	3.15 - 6.3 inch
Dimensions h*w*d:	: 5800*6020*7030 mm	228*237*276 inch
Installed power	: 80 kW	107 HP

CAPACITY

- Depending on drum / bin infeed & product:
  - Juice: 35 bins or 120 drums/hour
  - Ice: 120 drums/hour *(When used in combination with 2 x CIM)
  - Concentrate: 29 bins or 70 drums/hour

  *Without using Bag Squeezer, frozen drums well pre-thawed
- Pump capacity 8 - 35 m³ product per hour. (35 - 154 gpm)
- Pump capacity 50 m³ CIP liquid per hour (220 gpm)
- Pump pressure max. 12 bar. (174 psi)

PRODUCT INFORMATION

- Product type : Fruit juices and concentrates, liquid or frozen
- Product viscosity max : Dynamic viscosity 20.000 cP at a shear rate of 13 s^{-1}

CLEANING

- Cleaning depends on the product and company guidelines, the values below are guide values
- CIP cleaning after each production batch or before each production run after 12 hours of downtime
- Manual cleaning +- 20 min

CIP Time (sec)

CIP Step	Caustic	Caustic + Acid	Temperature (°C)	Concentration (%)
Pre Rinse	600	600	45	fresh water
Caustic (Organic soils)	1200	1200	75	0,5 - 2 % (Caustic soda)
Intermediate Rinse		600	20	fresh water
Acid (Inorganic soils)		600	65	0,5 - 1% (Acid)
Final Rinse	600	600	20	fresh water
Total CIP time (min)	**40**	**60**		

MAINTANENCE AND SERVICE

Remote support is available for this installation. Through a secure connection, we can analyze the installation, review data logging, provide remote maintenance support, and assist in resolving technical faults.
In addition, we offer tailored service agreements. This may include timely delivery of spare parts with instructions, or full maintenance based on defined service intervals.
Service options can be agreed with the customer during the project phase, helping to ensure reliable operation of the installation and reduced downtime.

RECOMMENDED MAINTENANCE INTERVALS

- General inspection : Every 1 week
- Emergency stop circuit testing : Every 3 months
- Minor maintenance : Every 6 months or 500 operating hours
- Major maintenance : Every 12 months or 1000 operating hours

BIN AND DRUM SPECIFICATION	EU	USA
· Dimensions drums:	Width: Ø480 to Ø630 mm Height: 810 to 1000 mm	19.0” to 24.8” inches 31.8” to 39.4” inches
· Max weight drum:	300 kg	660 Lbs
· Dimensions bin:	Length: 1465 mm Width: 1200 mm Height:1200 mm	57,7” inches 49,2” inches 49,2” inches
· Max weight bin :	1650 kg	3640 Lbs

MACHINE CONFIGURATONS

- TBDICS left
- Stair at right
- Stair at left

POWER SUPPLY / CONTROLES

- 3 Phase 400V 50Hz 200A+ neutral + earth, Siemens controls
- 3 Phase 480V 60Hz 160A + earth, Allen-Bradley controls, UL prepared

COMMUNICATION

- PROFINET connections pre-installed at Siemens controls
- Ethernet/IP connections pre-installed at Allen Bradley controls

OPTIONS

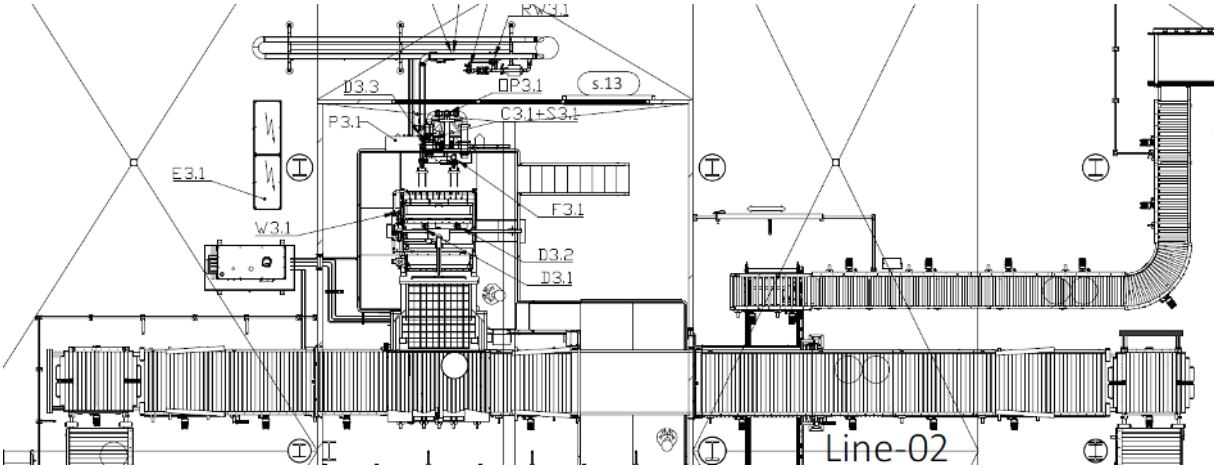
- Product parts in AISI 316
- Water flow meter + connection to CIP line
- Magnetic trap in front of the pump
- Standing enclosure cabinets, IP66 / NEMA 4x (VX25, basic cabinet, AISI 304)
- External pump cooling for low product flow rate from 0 to 20 m³/h (standard range is from 8 to 20 m³/h)

PROCESS OPTIONS

The TBDICS can be combined with the following Fluidor machines
Machine specification available upon request

- Crushed ice melter (CIM).
- Thawing tunnel
- conveyor systems: BIN opening station, BIN weighing system, BIN conveyor load/unload, BIN shuttle, BIN sliding door etc.

PROJECT LAYOUT EXAMPLE



ANNEXED DOCUMENTS

- Machine Layout
- Machine P&ID
- Fluidor standard components

GENERAL INFORMATION

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