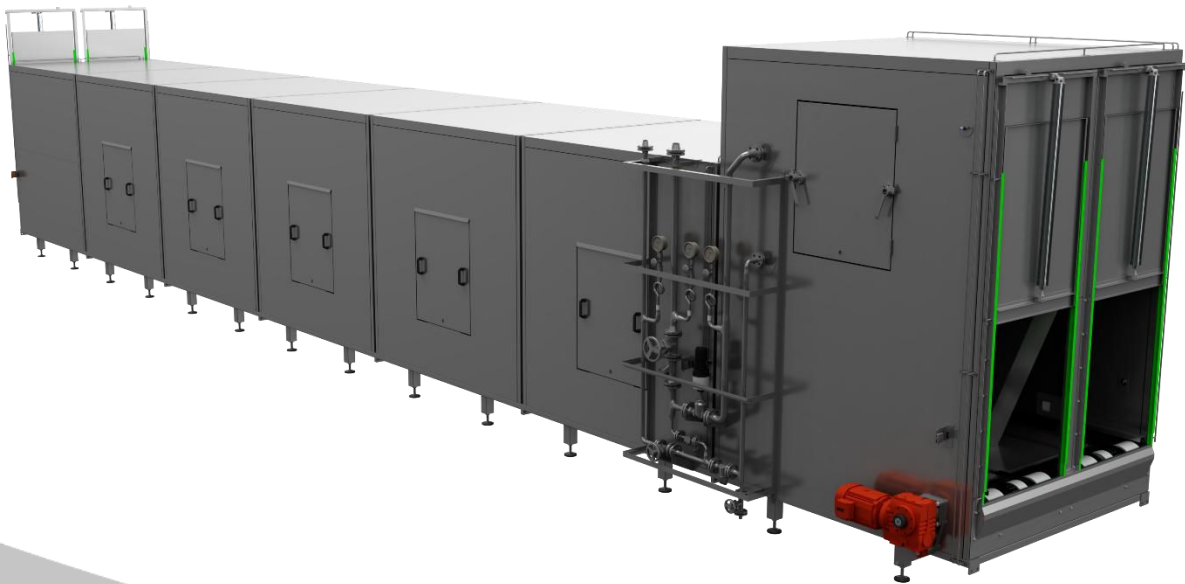


MACHINE SPECIFICATION

THAWING TUNNEL



Machine name	Thawing tunnel	Manufacturer	Fluidor Equipment B.V.
Publication date	03-03-2026	Address	Ramgatseweg 25, 4941VN Raamsdonksveer, The Netherlands
Version	1.2	Telephone	+31(0)162 581 450

DESCRIPTION

The Fluidor Thawing Tunnel is designed to pre-thaw the outer shell of the ice block, allowing for easy tipping of 200 L drums containing deep-frozen fruit juices, fruit pulps and fruit purees. This thawing process facilitates the release of products from the drum during dumping into the Drum Dumper Ice Crusher (DPRICS).

Frequency driven shuttles transport the drums in pairs in and out of the Thawing Tunnel. Two driven chain tracks take care of the transport inside the Tunnel. On top of the Tunnel hot air is created by circulating air through a steam / air heat exchanger. A frequency driven fan circulates the hot air through an air duct from which the air is precisely guided along the drums.

Only the outer shell and top surface of around 2-3 cm is thawed, the rest of the product remains deep frozen to maintain product quality. The capacity of the Thawing Tunnel is adjustable by duration time per track or drum and temperature (per tunnel). These parameters make it possible to pre-thaw smaller batches of different products with different pre-thawing times. The modular built configuration offers a flexible pre-thawing process. For a corresponding maximum capacity to the DPRICS and CIM, two Thawing Tunnels of 32 drums each are advised.

DESIGN SPECIFICATION

- According actual CE-regulations, only in combination with a Fluidor machine
- Developed and built according quality system ISO 9001
- Clean design according actual EN1672-2 and HACCP-regulations
- Good Manufacturing Practice Regulation (EC) 2023/2006
- Components according Fluidor standard components list
- Steam pipes A312-TP304L, will be built according the pressure Equipment Directive (PED 2014/68/EU). With a design standard according EN13480, ASME B 31.1, category Art 4, par.
- Machine control by HMI (Siemens or Allen Bradley)
- Control cabinet IP55 / NEMA 12 (VX25, various sizes, AISI 304)
- Module for remote internet access
- AISI304 housing and construction, modular built, containing 2 chain driven tracks.
- 1 Steam/Air heat exchanger for one section Thawing Tunnel.
- Air temperature in tunnel adjustable up to 90 °C.
- Inspection/access doors at one side.
- Alternative heating by electric power instead of steam on request.
- Height roller conveyor system 700 mm
- 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 (dimensions, utility & requirements drawing) available upon request
- Earthquake area extra fixation needed (anchors option)
- Machine is designed for indoor use in a Basic hygiene area

STEAM REQUIREMENTS:

Parameter	Value
Quality	Dry saturated steam
Humidity	Max 5% condensate
pH	8.5 – 9.2
Carbon dioxide	Max 2 ppm (mg/l)
Chloride	Max 5 ppm (mg/l)
Solid particles	Max 0.5 ppm (mg/l)
Turbidity	Max 1 NTU
Ammonia (NH ₃)	Max 5 mg/l

- Steam must free from condensate and particles.
- Steam supply line must be equipped with a pressure controller in order to maintain a constant feed pressure.
- Condensate traps must be provided close to the process line in order to produce dry steam.
- A master shut-off valve must be installed in the steam supply line.
- Steam pipes must be insulated as protection against personal injury and to avoid condensation.
- Before connecting the steam supply to the process line, the steam pipes must be blown clear with repeated blasts of steam, lasting 5-10 minutes.
- Condensate return pressure: ≤ 0,5 bar ≤ 7,5 psi

TECHNICAL DATA

EU

USA

Based on one tunnel for 32 drums

- | | | |
|--|--------------|-----------------|
| · Total weight empty | : 6800 kg | 14990 lbs |
| · Total weight Full | : 14000 kg | 30800 lbs |
| · Product | : -20, 20 °C | -4, 59 °F |
| · Air circulation adjustable | : 20, 90 °C | 59, 194 °F |
| · Ambient temperature | : 5 - 25 °C | 41 - 77 °F |
| · Relative humidity | : 30 - 70% | |
| · Noise level | : < 85 dB(A) | |
| · IP value (control cabinets + drives) | : IP55 | |
| · Adjustable machine support legs | : 80 -160 mm | 3.15 - 6.3 inch |
| · Heat load environment full capacity | : 27000 Kj | |

Tunnel module information :

sections weight:

- | | | |
|-----------------------|-----------|----------|
| · Start section (1x) | : 1020 kg | 2250 lbs |
| · Middle section (5x) | : 700 kg | 1540 lbs |
| · End section (1x) | : 2010 kg | 4430 lbs |

sections dimensions h*w*d:

- | | | |
|-----------------------|---------------------|------------------|
| · Start section (1x) | : 3240*2180*2340 mm | 128*86*92 inch |
| · Middle section (5x) | : 2500*2180*2500 mm | 99*86*99 inch |
| · End section (1x) | : 3290*2730*2575 mm | 130*107*101 inch |

CAPACITY

- Depending on drum infeed & product: Maximum capacity based on batches is 20 drum/hour
- Drums will stay in tunnel approx. 70 minutes, depending on product specifications.
- Up to 32 drums per Thawing Tunnel (16 drums/track), number of sections is per customer's request.

PRODUCT INFORMATION

- Product type : Frozen fruit juices (NFC), fruit pulps or fruit purees.

CLEANING

- Inspect the tunnel every three months and remove any contamination, such as labels. The inside of the tunnel is accessible through the doors on one side of the thawing tunnel.

MAINTENANCE 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 |

DRUM SPECIFICATION

- Dimensions drums:
- Max weight drum:

EU

Width: Ø480 to Ø630 mm
Height: 810 to 1000 mm
300 kg

USA

19.0" to 24.8" inches
31.8" to 39.4" inches
660 Lbs

MACHINE CONFIGURATIONS

- Thawing tunnel left
- Thawing tunnel right

POWER SUPPLY / CONTROLES

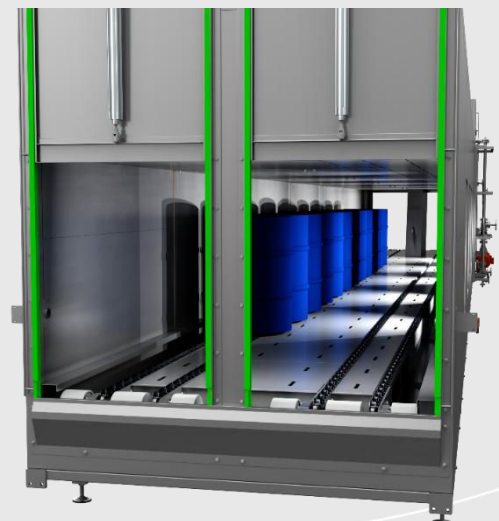
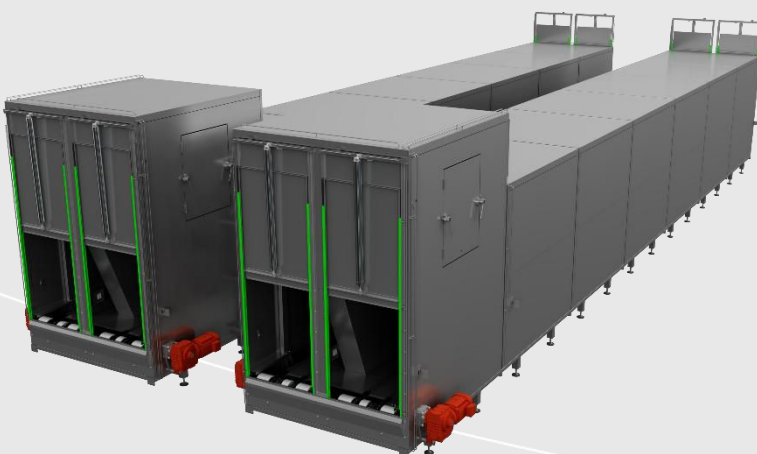
- 3 Phase 400V 50Hz 60 A+ neutral + earth, Siemens controls
- 3 Phase 480V 60Hz 40 A + earth, Allen-Bradley controls, UL prepared

COMMUNICATION

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

OPTIONS

- Standing enclosure cabinets, IP66 / NEMA 4x (VX25, basic cabinet, AISI 304)

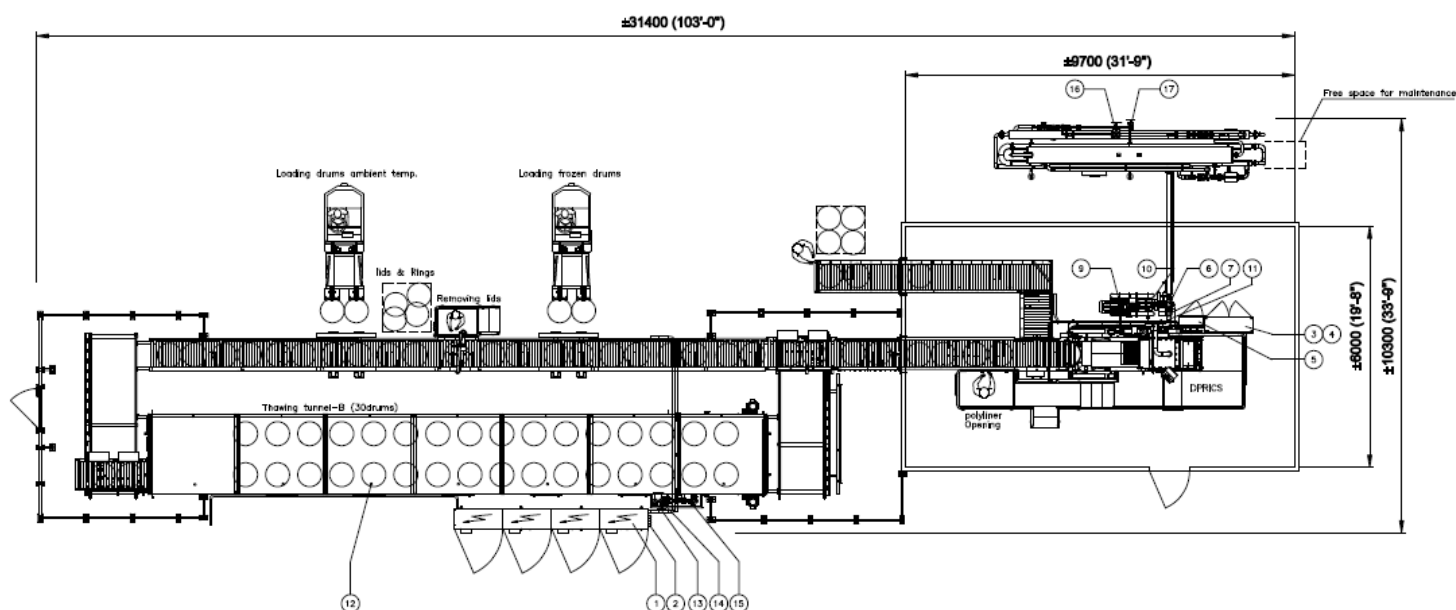


PROCESS OPTIONS

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

- Drum Dumper Ice Crusher (DPRICS)
- Crushed Ice Melter (CIM).
- Conveyor system: Drum opening station, Drum crusher, Drum weighing system, Drum conveyor loading full drums, Full or empty drum washing station etc.

PROJECT LAYOUT EXAMPLE



ANNEXED DOCUMENTS

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

GENERAL INFORMATION

Website	: www.fluidor.com
Telephone	: +31 162 581450
Sales	: Mr. Jan Vermeulen
Telephone:	: +31 162 581457
Mobile	: +31 6 25009609
Email	: j.vermeulen@Fluidor.com
Spares	: Mr. Wing Ho Kwok
Telephone	: +31 162 581468
Email	: wh.kwok@fluidor.com
Service	: Service department
Telephone	: +31 162 581466
Email	: service@fluidor.com