



# For some, the Perfect Life is Natural Fruit Juices

## FrontLine™ - Widestream® Plate Heat Exchangers

### Application

Pasteurisation and general cooling/heating of fruit juices and other liquid food products which contain pulp or fibres.

### Working principle

A plate heat exchanger consists of a pack of corrugated metal plates with port holes for the passage of two fluids between which heat transfer will take place.

The plate pack is assembled between a fixed frame plate and a movable pressure plate and compressed by tightening bolts.

The plates are fitted with a gasket which seals the inter-plate channel and directs the fluids into alternate channels. The number of plates is determined by the flow rate, physical properties of the fluids and the temperature program.

Connections may be located in frame plate and pressure plate and if multi section PHE, also in connection plate.

### The WideStream® plate

The WideStream® plate has a special pattern with few contact points, which allows products containing pulp & fibres to pass without blocking the passages. This results in long operational times without interruptions. The ports have a diameter enabling cleaning in place (CIP) with the same flow used in the process itself. The minimum of contact points between the WideStream® plates results in easy cleaning with short cleaning cycles. The plate pattern is designed for efficient backflushing with free reverse flow.

The WideStream® plate can be used together with other plates in the same heat exchanger frame.

### Standard Materials

#### Plates

Stainless steel AISI 316 - thickness 0.7 mm

Titanium - thickness 0.9 mm

#### Gaskets

High Temperature Nitrile-FDA. Clip-On design.

#### Frame

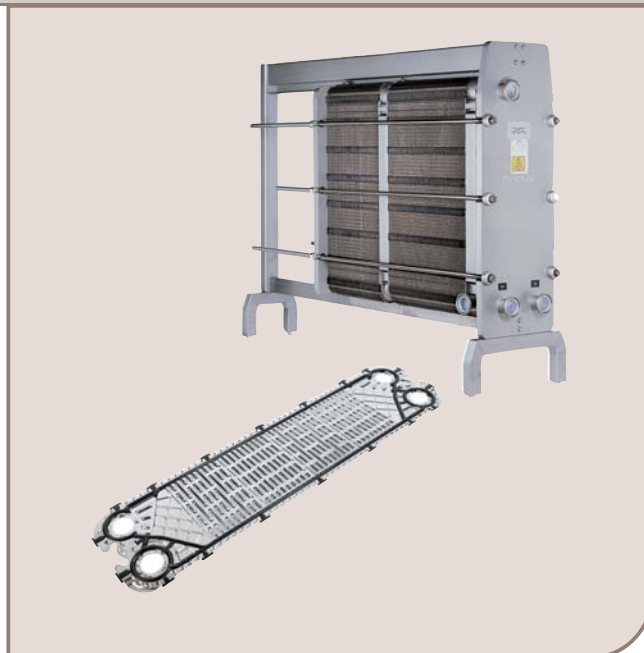
Frame and pressure plate in solid or clad stainless steel. All wetted parts in acid proof stainless steel. Other surfaces in various grades of stainless steel. Movable nuts on tightening bolts in chromium plated brass.

### Options

- A. Thermometer pocket and nib with ventilation cock<sup>1)</sup>
- B. Thermometer pocket<sup>1)</sup>
- C. Connection for 51 mm pressure transmitter<sup>1)</sup>
- D. Protection sheet
- E. Bolt protections of stainless steel
- F. 3-A finish
- G. Connections in titanium or SMO (frame and pressure plate)
- H. Extended legs
- I. Extra standard wrench or pneumatic tightening tool
- J. Test certificates and material certificate
- K. Testing by authorized inspection companies

All options are not available on all models.

<sup>1)</sup> At through pass corners in connection plates.



### Technical Data

#### Mechanical design pressure (g) / Temperature

FRM / RM – 7 bar/150 °C

Complies with European Pressure Equipment Directive (PED), may carry the CE mark depending on the design conditions.

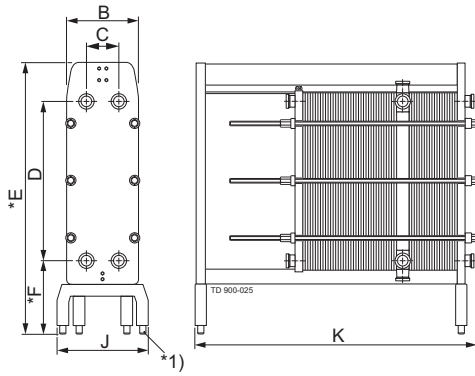
#### Connections

DIN, SMS, Tri-CLAMP, B.S./RJT and IDF/ISO male parts. Others on request

#### Plates

|                           | Front 6<br>WideStream® | Front 8<br>WideStream® |
|---------------------------|------------------------|------------------------|
| Plate pattern             | parallel               | parallel               |
| Surface [m <sup>2</sup> ] | 0.18                   | 0.38                   |
| Overall dim. [mm]         | 1,000 x 250            | 1,250 x 375            |
| Port dim. [mm]            | 55                     | 80                     |
| Thickness [mm]            | 0.7/0.9                | 0.7/0.9                |

## Dimensions



1) Adjustable feet  $\pm 50$  mm

|  | Front 6<br>WideStream® | Front 8<br>WideStream® |
|--|------------------------|------------------------|
| <b>Measurements [mm]</b>   |                        |                        |
| B  | 370                    | 500                    |
| C  | 129                    | 220                    |
| D  | 859                    | 1,095                  |
| E  | 1,420*                 | 1,850*                 |
| F  | 400*                   | 500*                   |
| J  | 520                    | 670                    |
| K  | 1,000-2,500            | 1,400-3,800            |
| Overall length varies depending on numbers of plates and connecting plates. Recommended free space around the unit is 1.5 meter at sides and frame head end. |                        |                        |
| <b>Connection [mm]</b>   |                        |                        |
| Diameter   | 51                     | 76                     |
| <b>Max. capacity [l/h] - velocity max. 2.0 m/s</b>   |                        |                        |
| Orange juice - 10 brix   |                        |                        |
| Pasteurization   | 7,000                  | 25,000                 |
| Heating 2° to 20°C   | 20,000                 | 32,500                 |
| Cooling 25° to 2°C   | 15,000                 | 32,500                 |

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