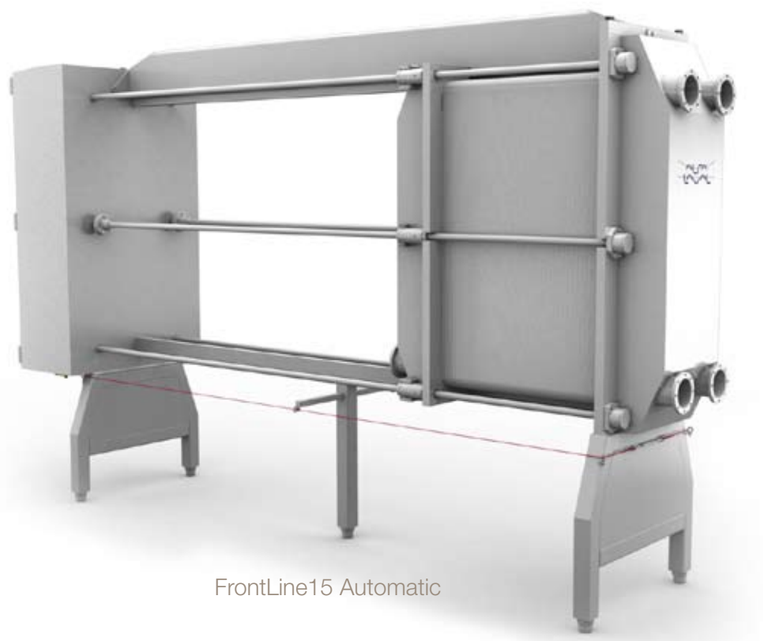
# Sanitary Plate Heat Exchangers

## FrontLine Series



FrontLine15 Automatic

FrontLine 8

Front Standard Plate

Front WideStream Plate

Front Gemini Plate

The FrontLine range from Alfa Laval represents the most advanced plate heat exchanger technology available for dairy, beverage and processed food applications. Designed exclusively for these demanding applications, the FrontLine range provides specific benefits to the food processor, including:

- Unique plate pattern provides even and gentle heating of sensitive food products
- Small port holes and long, narrow plates facilitate quick and easy cleaning, usually at process flows
- Integral glue-less gasket system provides for long gasket life, FDA compliant materials, high pressure operation and easy maintenance
- Frames provide for up to 290 psi operation, easy disassembly and modifications, and meet all 3A sanitary requirements

### Applications

The FrontLine can handle a wide variety of products and processes. Some examples include:

- Milk and cheese milk pasteurization
- Ultra-high temperature sterilization
- Beverage and energy drink pasteurization
- Standard and pulpy juice pasteurization
- Beer wort heating and beer cooling
- Liquid egg processing
- Bottled water treatment
- Soups, sauces and starch heating
- Catsup and mustard heating and cooling
- Biotechnology culture/broth sterilization
- Pharmaceutical WFI thermal treatment

### Other FrontLine Features

- Four sizes: Front6, Front8, Front10 and Front15 with plate ports and connections from 2" to 6" diameter
- With almost 10 sq. ft. surface area per plate the Front15 is the largest sanitary plate heat exchanger available
- Herringbone plate design provides initial sizing and future restreaming flexibility
- Connection plates with removeable double-corner options for maximum process flexibility

### Automatic Frame Features

Alfa Laval's unique automatic opening and closing frame provides access to the heat exchanger for inspection, cleaning or service. This option features:

- A clean and simple electrical drive system using standard components
- Nuts and bearings that are readily accessible for lubrication and maintenance
- Sealed frame and pressure plates to keep the outside clean and the inside support structure dry
- Fast closing and opening speeds
- Emergency stop cord for safe single-operator operation
- Available for Front15 and Front10

### Plate Options

- ClipLine for standard duties
- ClipLine WideStream for pulpy juice
- ClipLine Gemini for double-wall protection
- Standard materials include AISI 316, SMO 254, Titanium and Hastelloy

## BaseLine Series

BaseLine 10 BaseLine 6 BaseLine 3

The BaseLine range offers lower cost, yet sanitary solutions for less sensitive applications.

### Key Features

- Efficient heat transfer plates
- Sizes range from Base3 to Base11 featuring 1" to 4" connections
- Wide range of plate materials and options
- Glue-less gasket system offering FDA compliant materials
- Solid stainless steel frames rated to 145 psi operation
- Meets all 3A sanitary requirements
- Connection plates for multi-duty applications

### Applications

- Milk and beverage processing
- Wine tempering
- Bottled water treatment
- CIP heating
- RO water

## TS Steam Heater

TS6-MFMC

TS6-MFG

The Alfa Laval TS Steam Heater is designed exclusively for steam to water heating. The unique plate geometry, combined with heavy duty gaskets, makes this unit ideal for use in hot water sets and for the replacement of existing shell and tube heat exchangers.

### Key Features

- Sturdy, high pressure frames
- Sizes range from TS6 to TS20 with connections from 3" to 8" diameter
- Easy to modify by adding or removing plates to accommodate future process changes
- Extremely compact, small footprint
- ASME coded painted frame
- 3A compliant stainless steel frame

### Applications

- Hot water sets for pasteurizers
- Shell and tube replacement
- CIP solution heating

## Utility Heat Exchangers

M15-MFG

M10-BWFD

Brazed

Alfa Nova

### M-Line

#### Key Features

- Efficient heat transfer plates
- Sizes range from M3 to M30
- Connections from 1" to 12" diameter
- ASME coded to 300 psi

#### Applications

- Potable water
- Glycol and chilled water tempering

### Semi-Welded

#### Key Features

- Welded plate pairs eliminate field gasket on refrigerant side
- Wide range of sizes
- Separate O-ring gasket on refrigerant side
- ASME coded to 300 psi

#### Applications

- Glycol and water chilling utilizing NH3 or Freon
- Replacement of shell and tube chillers

### Brazed / Alfa Nova

#### Key Features

- Low cost, compact and highly efficient
- High temperature and pressure operation
- Brazed uses copper as sealing agent, eliminating gaskets
- Alfa Nova is of solid stainless steel construction

#### Applications

- Glycol and water chilling
- Hot water heating
- CIP heating (Alfa Nova)

# Application Guide

| Series (Prefix) | FrontLine (Front) | | | | BaseLine (Base) | | | | | | TS | | MLine (M) | | | | | | | Semi-Welded | | | | Copper Brazed (CB) | | | | Alfa Nova (AN) | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Size/Type | 6 | 8 | 10 | 15 | 3 | 6 B | 6M | 10B | 10M | 11 | 6M | 20M | 3 | 6B | 6M | 10B | 10M | 15B | 15M | M6B | M10B | MK15 | T20 | 14-77 | 200 | 300 | 400 | 27 | 52 | 76 |
| Dairy | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Milk Cooling | • | • | • | • | • | | • | | • | • | | | | | | | • | | | | | | | | | | | | | |
| Milk/cream pasteurization | • | • | • | • | | | • | | • | | | | | | | | | | | | | | | | | | | | | |
| Cultured milk cooling | • | • | • | • | | | • | | | | | | | | | | | | | | | | | | | | | | | |
| Whey pasteurization | • | • | • | • | | | • | | • | | | | | | | | | | | | | | | | | | | | | |
| Ice cream pasteurization | • | • | • | • | | | • | | | | | | | | | | | | | | | | | | | | | | | |
| Beverages | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Juices, drinks, wine | • | • | • | • | • | • | • | • | • | • | | | | | | | | | | • | • | • | • | | | | | | | |
| Juice with pulp/fibres | • | • | • | • | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Brewery | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Wort cooling | • | • | • | • | • | | • | | • | | | | | | | | • | | | | | | | | | | | | | |
| Beer cooling | • | • | • | • | • | • | • | • | • | • | | | | | | | • | | | • | • | • | • | | | | | | | |
| Beer pasteurization | • | • | • | • | | | | | | | | | | | | | • | | | | | | | | | | | | | |
| Other food | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Low viscous | • | • | • | • | • | | • | | • | | | | • | | • | | • | | | | | | | | | | | | | |
| High viscous | • | • | • | • | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Vegetable oil | • | • | • | • | • | • | • | • | • | • | | | • | • | • | • | • | • | • | | | | | | | | | | | |
| Pharmaceutical | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Pre-heating water for WFI | | | | | • | • | • | • | • | • | • | • | • | • | | | • | | | | | | | | | | | | | |
| In-line heater | | | | | • | | • | | | | | | • | • | | • | | | | | | | | | | | | | | |
| Utilities | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Water heating/cooling | | | | | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | | | | | • | • | • | • | • | • | • |
| Glycol cooling | | | | | • | • | • | • | • | • | | | • | • | • | • | • | • | • | | | | | • | • | • | • | • | • | • |
| Refrigeration | | | | | | | | | | | | | | | | | | | | • | • | • | • | • | • | • | • | • | • | • |
| CIP heating | • | • | • | • | • | • | • | • | • | • | • | • | • | | • | | • | | | | | | | | | | | • | • | • |

# PHE Specification Guide

| Series (Prefix) | FrontLine (Front) | | | | BaseLine (Base) | | | | | | TS | | MLine (M) | | | | | | | Semi-Welded | | | | Copper Brazed (CB) | | | | Alfa Nova (AN) | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Size/Type | 6 | 8 | 10 | 15 | 3 | 6 B | 6M | 10B | 10M | 11 | 6M | 20M | 3 | 6B | 6M | 10B | 10M | 15B | 15M | M6B | M10B | MK15 | T20 | 14-77 | 200 | 300 | 400 | 27 | 52 | 76 |
| Frames | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Stainless Steel | • | • | • | • | • | • | • | • | • | • | • | | | | | • | • | | | | | | | | | | | | | |
| Painted | | | | | | | | | | | • | • | • | • | • | • | • | • | • | • | • | • | • | | | | | | | |
| Max Pressure 145 psi | • | | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | | | | | | | |
| Max Pressure 230 psi | | • | | • | | | | | | | | | | | | • | • | | | | | | | | | | | | | |
| Max Pressure > 300 psi | • | • | • | | | | | | | | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • |
| Auto Open | | | • | • | | | • | | | | | | | | | | | | | | | | | | | | | | | |
| Sanitary Connections | • | • | • | • | • | • | • | • | • | • | • | | • | • | • | • | • | | | | | | | | | | | | | |
| Plates | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Widestream | • | • | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Gemini | • | • | • | | | | • | | | | | | | | | | | | | | | | | | | | | | | |
| SMO 254 | • | • | • | • | • | • | • | • | • | | | • | • | • | • | • | • | • | • | | | | | | | | | | | |
| C276 | | | • | • | | | | | | | | • | | | | | | | | • | • | • | • | | | | | | | |
| Titanium | • | • | | | • | • | • | • | • | | • | • | • | • | • | • | • | • | • | | | | | | | | | | | |
| Regulatory | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| FDA Gaskets | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | | | | | | | | | | | |
| 3A Approval | • | • | • | • | • | • | • | • | • | • | • | | | | | • | • | | | | | | | | | | | | | |
| ASME | | | | | | | | | | | • | • | • | • | • | • | • | • | • | • | • | • | • | | | | | • | • | • |
| UL | | | | | | | | | | | | | | | | | | | | | | | | • | • | • | • | • | • | • |

## Inquiry check list

- Flow rates
- Allowable pressure drops
- Temperature program
- Percent heat recovery
- Physical properties
- Frame finish
- Regulation demands

## Parts and service check list

- Model number
- 10 digit manufacturing number
- Product and process parameters
- Last service date
- Plate count or “A” dimension
- Gasket material

## Contact

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## Alfa Laval in brief

Alfa Laval is a leading global provider of specialized products and engineered solutions.
Our equipment, systems and services are dedicated to helping customers to optimize the performance of their processes. Time and time again.
We help our customers to heat, cool, separate and transport products such as oil, water, chemicals, beverages, foodstuff, starch and pharmaceuticals.
Our worldwide organization works closely with customers in almost 100 countries to help them stay ahead.