



## Evotube

Heat exchanger systems for  
efficient product heating

## Heat exchanger systems: To heat even demanding products

The systems from EVOGUARD heat your products gently, ensuring microbiological safety and offering a high heat transfer performance.

- Suitable for a wide variety of products with different flow characteristics (even for products containing particles/fibres)
  - every kind of juices
  - milk, milk-mix-beverages, soymilk
  - beverages with particles/fibres (up to 15 x 15x 15 mm)
- Reducing the thermal impact acting on the product due to short dwell times
- Available as a complete system or individually designed to suit your line
- Development, engineering and production within the KRONES group

## Variant for heat recovery: Product against water

- Ideally suited for a large variety of products and a broad output range
- Processing also highly viscous products or products with fruit pieces
- Flexible configuration thanks to a variable mass flow and variable temperature on the secondary side

## Overview of our product range

Heat exchanger systems



Tank safety and cleaning systems



Hygienic valves  
Shut-off & separation



ESL valves  
Shut-off & separation



Protection valves



Control valve  
Controlling

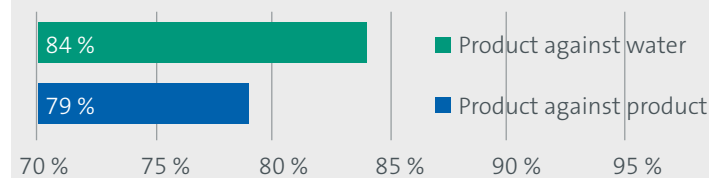


## The right heat exchanger for every application

EVOGUARD is your ideal partner when it comes to your customised heat exchanger:

- Clarification of your demands
- Individual design of the heat exchanger specifically to your requirements
- Rheological product characterisation possible in the KRONES laboratory
- Consultation by experienced specialists who can access an extensive database with more than 2,000 product data

Juice: 20 mPa, Capacity: 30 m<sup>3</sup>/h



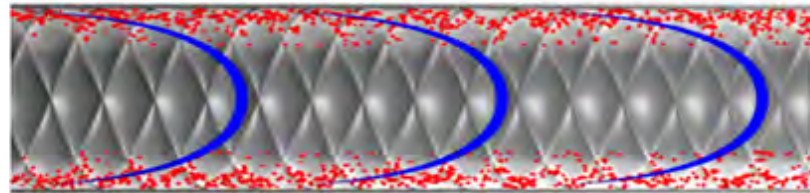
## Thermal product treatment with cross-corrugated tubes

- Breaking up the laminar boundary layer in the product stream due to their patented structure
- Reducing the required surface area of the heat exchanger by up to 30 percent
- Compact dimensions of the heating system (reduced footprint)
- High turbulence over a wide capacity and/or viscosity range
- High flexibility in product range and performance variance
- Low thermal load
- Short heating and cooling phases



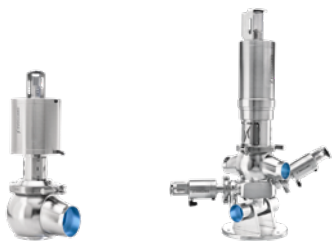
## Length compensation via bellows

- Stainless steel bellows on the secondary side to compensate for thermal expansion of the tubes
- No dynamic seals required
- No leakage in cold operating condition



### Aseptic valves

Shut-off & separation



### Sampling valve

Sampling system



### Pumps

Hygienic centrifugal pump



### Valve control head

Feedback



### Valve manifold

Automation



## Excerpt from our broad portfolio

Module type/ PW	Nominal flow @ 2 m/s (m <sup>3</sup> /h)	Module length (m)	Exchanger surface area (m <sup>2</sup> )	Max. particle size (mm)	Pressure-loss <sup>1</sup> inner tube/outer tube (bar)	Heat transfer per- formance <sup>1,2</sup> (kW)
100-17*14/1	13.8	6	4.29	5 x 5 x 5	0.29/0.07	322.9
100-19*14/1	15.5	6	4.80	5 x 5 x 5	0.29/0.07	380.4
110.3-24*14/1	19.6	6	6.06	5 x 5 x 5	0.23/0.08	488.2
110.3-16*18/1	23.2	6	5.25	7 x 7 x 7	0.23/0.13	503.9
125-19*18/1	27.5	6	6.23	7 x 7 x 7	0.23/0.10	575.8
135.7-21*18/1	30.4	6	6.89	7 x 7 x 7	0.23/0.07	616.7
135.7-17*22/1	38.4	6	6.86	9 x 9 x 9	0.15/0.12	728.8
150-19*22/1	43.0	6	7.66	9 x 9 x 9	0.15/0.15	781.3
150-22*22/1	49.8	6	8.87	9 x 9 x 9	0.19/0.20	969.5
135.7-12*25/13	34.7	6	5.49	10 x 10 x 10	0.11/0.14	554.6
150-15*25/13	44.9	6	6.90	10 x 10 x 10	0.17/0.12	741.7
150-19*25/13	56.8	6	8.74	10 x 10 x 10	0.13/0.33	1052.7

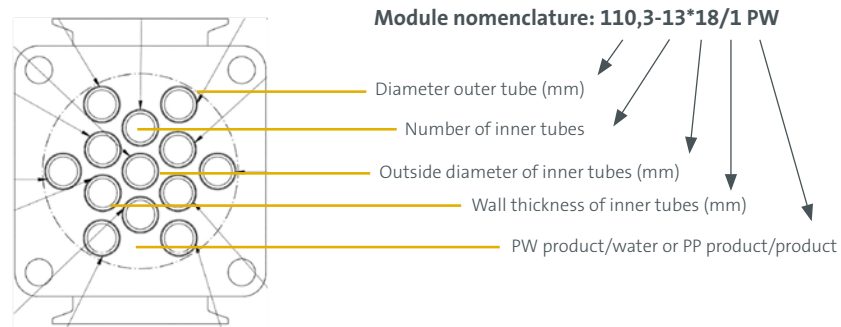
All values based on water:

<sup>1</sup> water vs. water at nominal flow  
(counter-current 1:1)

<sup>2</sup> inlet inner tube 20 °C  
inlet outer tube 70 °C

Options:

\* All module types available as cross corru-  
gated tubes or plane tubes;  
Material: SAF2205  
(certified OEM manufacturer/design  
by KRONES) instead of AISI 316L



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