Alfa Laval ViscoLine™ multitube unit

The tubular heat exchanger series from Alfa Laval

Introduction

The ViscoLine Multitube hygienic heat exchanger is ideally suited for the heating, cooling and pasteurization of products with low and medium viscosity, and products that contain fibres and small particulates.

Application

ViscoLine Multitube heat exchangers are used in conjunction with a wide range of products, including milk, cream water, yellow fats, whole egg, egg white, egg yolk, fruit puree, baby food, many kind of fruit juices containing pulp and fibers, fruit concentrates, beer mash, tomato juice and nectar, protein solutions, yeast and soft drinks.

Benefits

- Low maintenance costs
- High working pressure
- High working temperatures
- Easy to expand
- Easy to inspect and clean

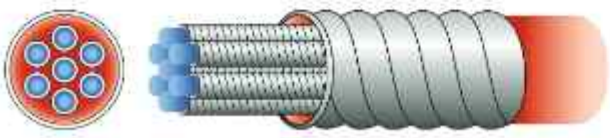
Design

The ViscoLine Multitube unit consists of a bundle of tubes mounted inside an outer shell, and welded onto tube plates at both ends. The product medium flows inside these tubes, and the service medium between and around them.

All the product tubes are connected in parallel and in such a way that the flow is counter-current in relation to the service medium. If required, these product tubes can feature a corrugated surface. Otherwise the inner tubes would be smooth and designed particularly for fouling or viscous fluids. The service media shell could be either smooth or corrugated.

The eccentric reducers can be welded, clamped or flanged.

ViscoLine Multitube modules are normally connected in series and grouped on a common frame. The installation is maintenance free, thus eliminating any need for spare parts.



Options

- Protection sheets
- Thermal insulation
- Video inspection
- X-Rays measurements & certificates
- NDT testing & certificates
- Frame angled for self-drainage

Configuration

VLM19x25/154-6.0-316L/304-C

VLM	ViscoLine Multitube
19	Number of product tubes
25	Outer diameter of product tubes
154	Outer diameter of service shell
6.0[1]	Module length (m)
AISI316L	Material product side (tube)
AISI304	Material service side (shell)
C	Corrugated inner tubes
S	Smooth inner tubes

[1] Also available in 3 meter length

Working principle

ViscoLine Multitube tubular heat exchanger incorporates corrugated tubes or other advanced profiles designed to increase turbulence in the flow of the fluid. This substantially increases the overall heat transfer coefficient.

Technical data

The Viscoline Multitube Unit is designed for a pressure of 15 bar (217 PSI) on the product side (tubes) and 10 bar (145 PSI) on the service side (shell), depending on the connections. The unit can, however, accommodate higher pressure ratings, depending on component thickness as connection type.

Connections for both product side (tubes) and service side (shell) include: SMS, DIN 11851, DIN 11864, Tri-Clamps, Flange and others.

The ViscoLine Multitube unit complies with the European Pressure Equipment Directive (PED 2014/68/EU), and is entitled to bear the CE mark. Where the CE mark is not required, Viscoline would be manufactured according to Sound Engineering Practice (SEP) and Good Manufacturing Practise (GMP, EC 2023/2006). Other design codes are available as well such as ASME VIII Div.1 and others would be on request like SELO's China Manufacturer License (SELO approval).

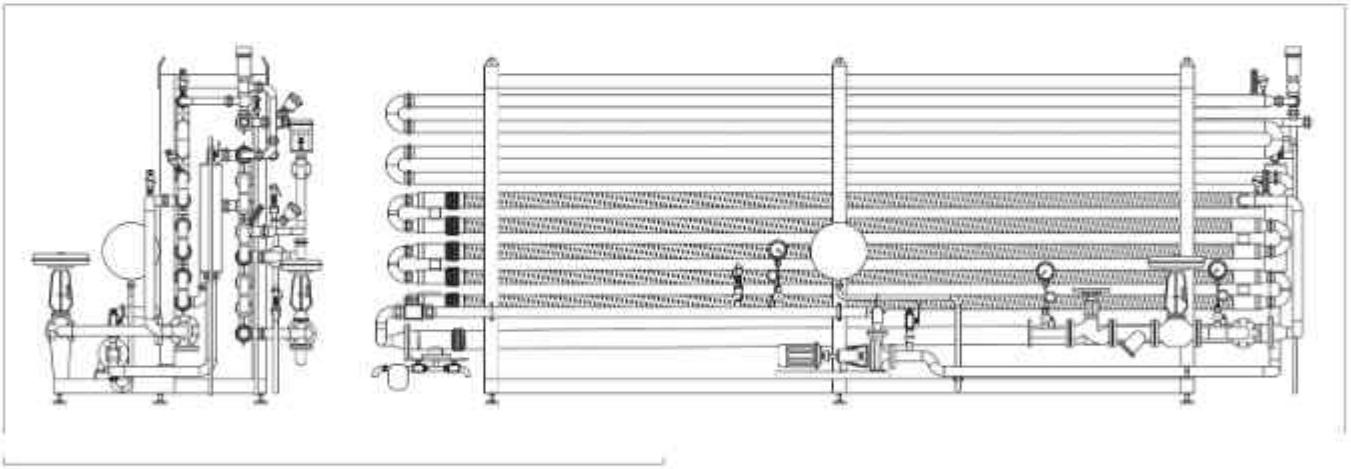
It is designed to operate at a temperature of 190°C (374°F) although higher temperatures are also met.

All units can be provided with an expansion joint to absorb thermal expansion stress.

ViscoLine heat exchangers are available with different surface finish and can be electropolished if required.

Material[1]	
Product side (tubes)	Stainless steel AISI 316L
Service side (shell)	Stainless steel AISI 304 or AISI 316L (optional)
Frame	Stainless steel AISI 304
Gaskets	NBR, EPDM, FKM, PTFE and others on request

[1] Other material available on request such as SAF 2205, SAF 2507, SMO 254 for inner tubes, tube sheet and bends



How to contact Alfa Laval
Up-to-date Alfa Laval contact details for all countries are always available on our website at www.alfalaval.com