



# Alfa Laval ViscoLine™ Multitube Unit

The tubular heat exchanger series from Alfa Laval

## Introduction

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

## Applications

These units 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 pressures
- High working temperatures
- Easy to expand
- Easy to be inspected and cleaned.

## Standard 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 so 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 (especially designed for fouling or viscous fluids).

The service media shell could be either smooth or corrugated.

ViscoLine Multitube modules are normally connected in series and grouped on a common frame.

The eccentric reducers can be welded, clamped or flanged.

The installation is maintenance free, thus eliminating any need for spare parts.



## Working principle

ViscoLine Multitube is a highly tubular heat exchanger that 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.



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## Technical data

### Mechanical design pressure

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.

The ViscoLine Multitube unit complies with the European Pressure Equipment Directive (PED 97/23/CE), 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). 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) and GOST Russia Certificate of Conformity.

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 any thermal expansion stresses that arise.

### Connections

For both product side (tubes) and service side (shell) we can offer: SMS, DIN 11851, DIN 11864, Tri-Clamps, Flange and other on request.

### Options

- Protection sheets
- Thermal insulation
- Video inspection
- X-Rays measurements & certificates
- NDT testing & certificates
- Other tests, documentation and certificates on requests.

### Standard materials

Product side (tubes)	Stainless steel AISI 316L
Service side (shell)	Stainless steel AISI 304 or AISI 316L (optional)
Frame	Stainless steel AISI 304 (units can be angled for self-draining on request)

Other materials are available on request such as SAF 2205, SAF 2507, etc for the inner tubes, tube sheet and bends.

Gaskets materials are: NBR, EPDM, Viton, Perlast™ and others on request.



The ViscoLines can be manufactured with different surface finish and can be electropolished if required

## Designation

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:	module length (m)
AISI 316L:	material product side (tube)
AISI 304:	material service side (shell)
C:	corrugated inner tubes
S:	smooth inner tubes

All types are also available in 3-meter length. Other ViscoLine dimensions on request.

Type	Heat transfer area	
	[m <sup>2</sup> ]	ft <sup>2</sup>
VLM 3x14/40-6	0.74	7.96
VLM 5x14/52-6	1.23	13.2
VLM 4x16/52-6	1.13	12.2
VLM 7x14/63-6	1.72	18.5
VLM 5x16/63-6	1.41	15.2
VLM 9x14/70-6	2.21	23.8
VLM 7x16/70-6	1.98	21.3
VLM 4x20/70-6	1.43	15.4
VLM 13x14/76-6	3.19	34.3
VLM 9x16/76-6	2.54	27.3
VLM 16x14/85-6	3.92	42.2
VLM 12x16/85-6	3.39	36.5
VLM 7x20/85-6	2.51	27.0
VLM 4x25/85-6	1.79	19.3
VLM 17x14/89-6	4.17	44.9
VLM 13x16/89-6	3.68	39.6
VLM 21x14/102-6	5.15	55.4
VLM 15x16/102-6	4.24	45.6
VLM 24x14/104-6	5.88	63.3
VLM 20x16/104-6	5.65	60.8
VLM 12x20/104-6	4.30	46.3
VLM 7x25/104-6	3.14	33.8
VLM 30x14/114-6	7.35	79.1
VLM 22x16/114-6	6.22	66.9
VLM 12x25/114-6	5.38	57.9
VLM 37x14/129-6	9.07	97.6
VLM 26x16/129-6	7.35	79.1
VLM 19x20/129-6	6.80	73.2
VLM 15x25/129-6	6.73	72.4
VLM 35x16/140-6	9.90	106.5
VLM 37x16/154-6	10.46	112.6
VLM 19x25/154-6	8.52	91.7
VLM 55x16/168-6	15.55	167.4
VLM 23x25/168-6	10.40	111.9



# Alfa Laval ViscoLine™ Monotube Unit

## Shell and tube heat exchanger

### Introduction

The ViscoLine™ Monotube is the Alfa Laval hygienic tube-in-tube heat exchanger ideally suited for the heating, cooling and pasteurization of products with low and average viscosity, and products that contain fibers and big particulates.

### Applications

The monotube is especially used for grape mash, diced tomato, diced vegetable and diced fruits and also sauces and soups that contain big particles.

### Benefits

- Low maintenance costs
- High working pressures
- High working temperatures
- Easy to expand
- Easy to be inspected and cleaned.

### Standard design

The ViscoLine Monotube heat exchanger consists of a single tube mounted inside an outer shell tube. The product medium flows inside this tube, and the service medium around it. It is a fully welded construction with a bellow on shell tube to absorb thermal expansion. ViscoLine Monotube modules are normally connected in series and mounted on support frame or full frame.

### Working principles

The product medium inside the tube flows in counter current to the service medium. The product tube is corrugated or it can be smooth. The shell tube is always corrugated. The installation is maintenance free, thus eliminating any need for spare parts.

### Technical data

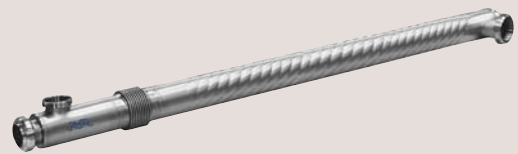
Mechanical design pressure

The Viscoline Monotube Unit is designed for a pressure of 15 bar (217 PSI) on the product side (tube) 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.

The ViscoLine Monotube unit complies with the European Pressure Equipment Directive (PED 97/23/CE), 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). 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) and GOST Russia Certificate of Conformity.

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 any thermal expansion stresses that arise.



## Connections

For both product side (tube) and service side (shell) we can offer: SMS, DIN 11851, DIN 11864, Tri-Clamps, Flange and other on request.

## Options

- Protection sheets
- Thermal insulation.
- Video inspection.
- X-Rays measurements & certificates.
- NDT testing & certificates.
- Other tests, documentation and certificates on requests.

## Standard materials

Product side (tubes)	Stainless steel AISI 316L
Service side (shell)	Stainless steel AISI 304 or AISI 316L (optional)
Frame	Stainless steel AISI 304 (units can be angled for self-draining on request)

Other materials are available on request such as SAF 2205, SAF 2507, etc for the inner tubes, tube sheet and bends.

Gaskets materials are: NBR, EPDM, Viton, Perlast™ and others on request.



The ViscoLines can be manufactured with different surface finish and can be electropolished if required

## Designation

VLO 51/76-6-316L/304-C :

VLO:	ViscoLine Monotube
51:	outer diameter of product tube
76:	outer diameter of service shell
6:	module length (m)
316L:	material product side (tube)
304:	material service side (shell)
C:	corrugated inner tube
S:	smooth inner tube

All types are also available in 3 meter length

Type	Volume in product		Heat transfer	
	tube litres	gallons	area m <sup>2</sup>	ft <sup>2</sup>
VLO 16/25-6	0.92	0.24	0.28	3.0
VLO 20/38-6	1.53	0.40	0.36	3.9
VLO 25/40-6	2.49	0.66	0.45	4.8
VLO 28/52-6	2.95	0.78	0.50	5.4
VLO 34/52-6	4.53	1.20	0.61	6.6
VLO 38/63-6	5.81	1.53	0.69	7.4
VLO 40/63-6	6.45	1.70	0.73	7.9
VLO 38/70-6	5.81	1.53	0.69	7.4
VLO 40/70-6	6.45	1.70	0.73	7.9
VLO 51/76-6	10.8	2.84	0.93	10.0
VLO 52/76-6	11.3	2.99	0.95	10.2
VLO 51/85-6	10.8	2.84	0.93	10.0
VLO 52/85-6	11.3	2.99	0.95	10.2
VLO 63/89-6	16.7	4.41	1.16	12.5
VLO 70/89-6	20.5	5.42	1.28	13.8
VLO 70/102-6	20.5	5.42	1.28	13.8
VLO 70/104-6	20.5	5.42	1.28	13.8
VLO 76/104-6	24.5	6.47	1.40	15.1
VLO 76/114-6	24.5	6.47	1.40	15.1
VLO 85/114-6	30.9	8.17	1.56	16.8
VLO 76/129-6	24.5	6.47	1.40	15.1
VLO 85/129-6	30.9	8.17	1.56	16.8
VLO 102/140-6	44.9	11.86	1.88	20.2
VLO 102/154-6	44.9	11.86	1.88	20.2

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## How to contact Alfa Laval

Contact details for all countries are continually updated on our website. Please visit [www.alfalaval.com](http://www.alfalaval.com) to access the information direct.



## ViscoLine™ CIP unit

Tubular heat exchanger for low viscosity food and cleaning-in-place

### Introduction

The ViscoLine™ CIP unit is the Alfa Laval tubular heat exchanger specially designed for the heating of water or CIP (NaOH, HNO<sub>3</sub>,...) solutions using steam or hot water as heating media.

### Applications

The ViscoLine™ CIP unit is ideal for:

- Heating of water or CIP solutions by means of steam.
- Processing low viscosity products, containing fibers and small particulates
- General heating and cooling applications.

### Benefits

- Low maintenance and operating costs
- High working pressures
- High working temperatures
- Easy to be inspected and cleaned
- Easy to be assembled/disassembled.

### Working principle

The heat exchanger is formed by a tube bundle (welded at both ends onto flat tube plates) inside a shell. Product medium flows inside the tubes of the bundle and the service medium between and around these tubes. This makes it compact and easy to install.

All tubes are connected in parallel and in counter-current flow to the service medium. The product tubes are corrugated. The service media shell is smooth.

OBS! Vertical installation is recommended for steam to water heating in order to drain the condensate

### Standard design

ViscoLine CIP and water heater is available in 3 sizes.

### Technical data

#### Max. operating pressure

Tube side	15 bar (217 PSI)
Shell side	10 bar (145 PSI)
Complies with the European Pressure Equipment Directive (PED).	
Design temperature	-20/190°C (-4/374°F)

### Connections

Product side (tubes)	ISO 2037 SMS
Service side (shell)	Flange EN 1092-1

-Counter flanges included in the scope of supply.

The ViscoLine™ CIP unit complies with the European Pressure Equipment Directive (PED 97/23/CE), and is entitled to bear the CE mark.

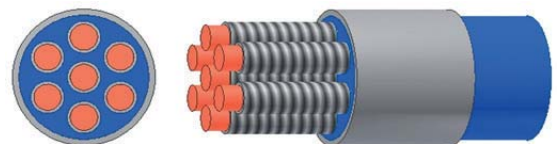
### Options

- Thermal insulation.



### Standard materials

Product side (tubes)	1.4404 (316L)
Service side (shell)	1.4301 (304)



The three ViscoLine™ CIP standard sizes are available on stock providing a fast delivery time. If requested, Alfa Laval can design and build a customized CIP solution to meet customer's requirements.

### Designation

VLC 20x16/104-2.0-316L/304-C

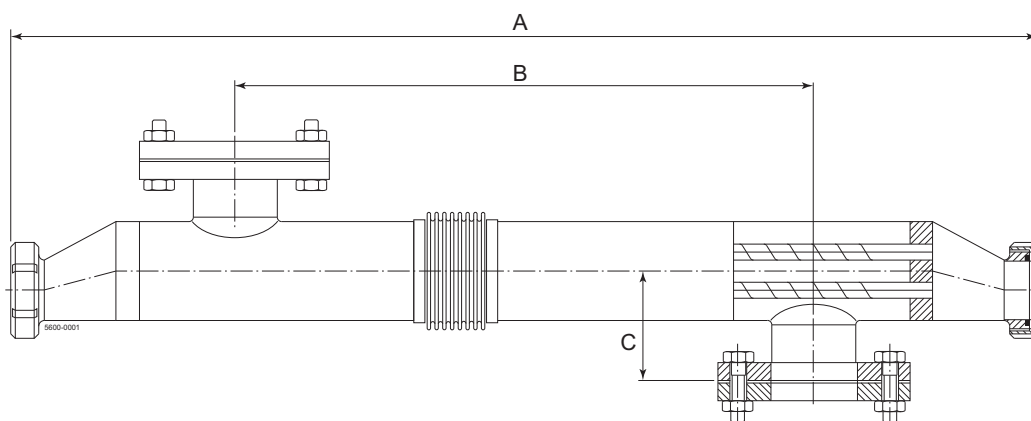
VLC	ViscoLine CIP
20	Number of product tubes
16	Outer diameter of product tubes (mm)
104	Outer diameter of service shell (mm)
2.0	Module length (mm)
316L	Material tube side
304	Material shell side
C	Corrugated product tubes



### Dimensions

VLC Type	Model	Dimensions (mm)			Connections		Volume in litre	
		A	B	C	Shell Side	Tube Side	Shell Side	Tube Side
1	VLC 20x16/104-2	2.234	1.776	115	OD 76.1	SMS 63.5	7.33	6.03
2	VLC 31x16/129-2	2.239	1.76	138	OD 101.6	SMS 76.1	8.14	8.14
3	VLC 37x16/154-3	3.265	2.76	150	OD 101.6	SMS101.6	19.77	16.85

VLC Type	Model	Dimensions (inches)			Connections		Volume in US gallons	
		A	B	C	Shell Side	Tube Side	Shell Side	Tube Side
1	VLC 20x16/104-2	88.0	69.9	4.6	OD 3"	SMS 2.5"	1.9	1.6
2	VLC 31x16/129-2	88.1	69.3	5.5	OD 4"	SMS 3"	2.2	2.2
4	VLC 37x16/154-3	128.5	108.7	5.9	OD 4"	SMS 4"	5.2	4.5



Type	Article nr.
VLC20x16/104-2	9680168330
VLC31x16/129-2	9680168331
VLC37x16/154-3	9680168334

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### How to contact Alfa Laval

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## Alfa Laval ViscoLine™ Annular Unit

The tubular heat exchanger series from Alfa Laval

### Introduction

The ViscoLine™ annular unit is the Alfa Laval hygienic quadruple tubular heat exchanger ideally suited for the heating, cooling and pasteurization of non-Newtonian products with high viscosity, and products that contain particulates.

### Applications

These units are most commonly used in conjunction with low acid products with average/high viscosity, such as tomato concentrate, banana paste, sourdough, chocolate sauce, mayonnaise, malt extract, starch, baby food, curds, and tomato-based sauces and seasonings in general.

### Benefits

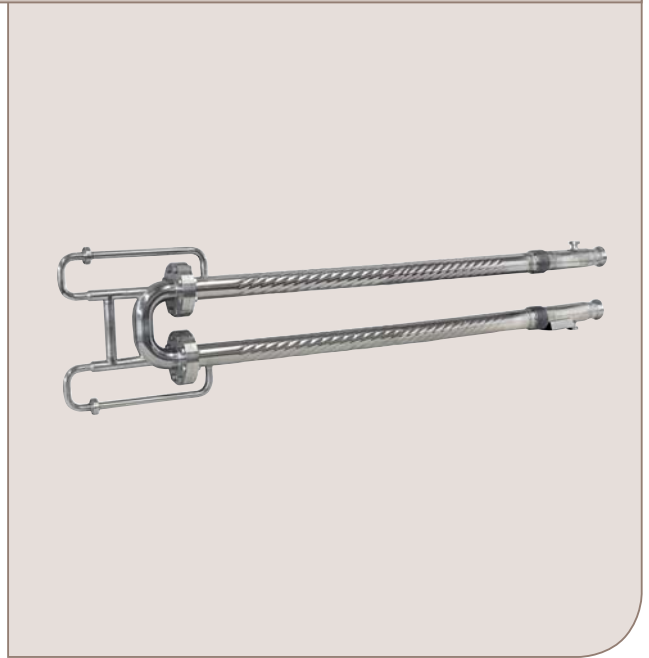
- Low maintenance costs.
- High working pressures
- High working temperatures.
- Easy to expand.
- Easy to be inspected and cleaned.

### Standard design

The VLA unit consists of four concentric tubes. The product medium flows in between two service channels, and is heated or cooled from the inside and outside at the same time. The unit features easy, full inspection of the product side by removing the tube insert. The outer shell is corrugated and the other three concentric tubes are not corrugated, smooth. If required, the product tube can be corrugated. To achieve a more even temperature on the product, static mixers can be welded on outside the third concentric tube. ViscoLine Annular heat exchangers are connected in series on product side and in parallel on water/service side and grouped on support frame or full frame.

### Working principles

The product medium runs in between the second and the third concentric tube and is counter-current relation to the service medium. The only spare parts needed are the O-rings in the header. There is a maximum gap on the product side of 49,2 mm (1,9 inches) and a minimum gap of 5,8 mm (0,2 inches).





## Technical data

### Mechanical design pressure

The Viscoline annular 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 up to 100 bar, depending on component thickness as connection type.

The ViscoLine Annular unit complies with the European Pressure Equipment Directive (PED 97/23/CE), 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). 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) and GOST Russia Certificate of Conformity.

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 any thermal expansion stresses that arise.

Static mixers can be included to increase turbulence and guarantee an homogeneous thermal treatment.

### Connections

For both product side (tubes) and service side (shell) we can offer: SMS, DIN 11851, DIN 11864, Tri-Clamps, Flange and other on request.

### Options

- Protection sheets.
- Thermal insulation.
- Video inspection.
- X-Rays measurements & certificates.
- NDT testing & certificates.
- Other tests, documentation and certificates on requests.

## Standard materials

Product side (tubes)	Stainless steel AISI 316L
Service side (shell)	Stainless steel AISI 304 or AISI 316L (optional)
Frame	Stainless steel AISI 304 (units can be angled for self-draining on request)

Other material available on request is 254 SMO on product side. Product bends in AISI 316L

Gaskets materials are: NBR, EPDM, Viton, Perlast™ and others on request.

### Designation

VLA 52/70/114/129-6.0-316L/304

VLA: ViscoLine Annular

52: 1st tube diameter

70: 2nd tube diameter

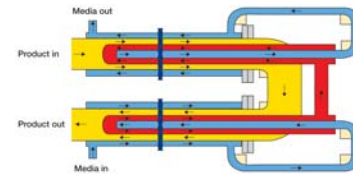
114.3: 3rd tube diameter

129: 4th and outer diameter of service shell

6.0: module length (meter)

316L: material product side (tube)

304: material service side (shell)



Graphic representation of the flow pattern in the ViscoLine Annular Unit



ViscoLine VLA 3 meter (9,8 ft) combined with 6 meter (19,7 ft) on a support frame

The ViscoLines can be manufactured with different surface finish and can be electropolished if required



Type	Gap		Volume in product gap		Heat transfer area	
	mm	inches	litres	US gallons	m <sup>2</sup>	ft <sup>2</sup>
VLA 16/25/40/52-6	5.8	0.23	3.6	0.95	1.1	11.8
VLA 25/34/52/63-6	7.5	0.30	6.2	1.64	1.48	15.9
VLA 18/28/52/63-6	10.5	0.41	8.1	2.14	1.37	14.7
VLA 28/40/63/76-6	9.8	0.39	9.7	2.56	1.78	19.2
VLA 25/38/63/76-6	10.7	0.42	10.4	2.75	1.75	18.8
VLA 25/34/63/76-6	12.8	0.50	11.9	3.14	1.68	18.1
VLA 20/28/63/76-6	15.8	0.62	13.7	3.62	1.57	16.9
VLA 40/60/76/85-6	5.9	0.23	7.8	2.06	2.37	25.5
VLA 34/52/76/85-6	10.1	0.40	12.4	3.28	2.24	24.1
VLA 34/51/76/85-6	10.7	0.42	13.1	3.46	2.22	23.9
VLA 34/48/76/85-6	11.9	0.47	14.3	3.78	2.15	23.1
VLA 28/40/76/85-6	16.1	0.63	17.9	4.29	2.02	21.7
VLA 25/38/76/85-6	17.0	0.67	18.7	4.94	1.99	21.4
VLA 25/34/76/85-6	19.1	0.75	20.2	5.34	1.91	20.6
VLA 20/28/76/85-6	22.1	0.87	22.0	5.81	1.81	19.5
VLA 40/63/85/102-6	8.8	0.35	12.6	3.33	2.59	27.9
VLA 40/60/85/102-6	10.4	0.41	14.6	3.86	2.53	27.2
VLA 34/52/85/102-6	14.5	0.57	19.2	5.07	2.40	25.8
VLA 34/51/85/102-6	15.1	0.59	19.9	5.26	2.38	25.6
VLA 28/48/85/102-6	16.4	0.65	21.1	5.57	2.34	25.2
VLA 28/40/85/102-6	20.5	0.81	24.7	6.53	2.19	23.6
VLA 25/38/85/102-6	21.5	0.85	25.5	6.74	2.16	23.3
VLA 25/34/85/102-6	23.5	0.93	27.0	7.13	2.08	22.4
VLA 20/28/85/102-6	26.5	1.04	28.8	7.61	1.97	21.2
VLA 40/70/89/102-6	7.5	0.30	11.5	3.04	2.78	29.9
VLA 40/63/89/102-6	10.7	0.42	15.8	4.17	2.67	28.7
VLA 40/60/89/102-6	12.3	0.48	17.8	4.70	2.61	28.1
VLA 34/52/89/102-6	16.5	0.65	22.5	5.94	2.48	26.7
VLA 34/51/89/102-6	17.1	0.67	23.1	6.10	2.46	26.5
VLA 28/48/89/102-6	18.3	0.72	24.3	6.42	2.41	25.9
VLA 28/40/89/102-6	22.5	0.89	28.0	7.40	2.26	24.3
VLA 25/38/89/102-6	23.4	0.93	28.7	7.58	2.23	24.0
VLA 25/34/89/102-6	25.5	1.00	30.2	7.98	2.16	23.3
VLA 20/28/89/102-6	28.5	1.12	32.0	8.45	2.05	22.1
VLA 34/60/89/102-6	11.3	0.44	16.1	4.25	2.53	27.2
VLA 34/60/89/102-6	10.3	0.41	14.5	3.83	2.46	26.5
VLA 28/48/89/102-6	16.3	0.64	21.0	5.55	2.28	24.5
VLA 28/48/89/102-6	14.8	0.58	18.6	4.91	2.19	23.6
VLA 52/85/102/114-6	6.3	0.25	11.5	3.04	3.25	35.0
VLA 52/76/102/114-6	10.7	0.42	18.5	4.89	3.13	33.7
VLA 52/70/102/114-6	13.8	0.54	23.1	6.10	3.02	32.5
VLA 40/63/102/114-6	17.1	0.67	27.4	7.24	2.91	31.3
VLA 40/60/102/114-6	18.7	0.74	29.4	7.77	2.85	30.7
VLA 34/52/102/114-6	22.8	0.90	34.0	8.98	2.72	29.3
VLA 34/51/102/114-6	23.4	0.92	34.6	9.14	2.70	29.1
VLA 28/48/102/114-6	24.7	0.97	35.9	9.48	2.65	28.5
VLA 28/40/102/114-6	28.8	1.13	39.5	10.43	2.50	26.9
VLA 52/89/114/129-6	10.7	0.42	21.3	5.63	3.56	38.3
VLA 52/85/114/129-6	12.7	0.50	24.6	6.50	3.49	37.6
VLA 52/76/114/129-6	17.1	0.67	31.7	8.37	3.37	36.3
VLA 52/70/114/129-6	20.2	0.80	36.2	9.56	3.26	35.1
VLA 40/63/114/129-6	23.4	0.92	40.6	10.73	3.14	33.8
VLA 40/60/114/129-6	25.0	0.98	42.5	11.23	3.09	33.3
VLA 34/52/114/129-6	29.2	1.15	47.2	12.47	2.94	31.6
VLA 28/48/114/129-6	31.0	1.22	49.0	12.94	2.87	30.9
VLA 28/40/114/129-6	35.2	1.39	52.7	13.92	2.72	29.3
VLA 52/89/114/129-6	8.7	0.34	16.9	4.46	3.45	37.1
VLA 52/89/114/129-6	7.2	0.28	13.8	3.65	3.34	36.0
VLA 52/76/114/129-6	15.1	0.59	27.5	7.26	3.22	34.7
VLA 52/70/114/129-6	18.2	0.72	31.9	8.43	3.15	33.9
VLA 52/60/114/129-6	23.0	0.91	38.2	10.09	2.98	32.1
VLA 70/114/140/154-6	10.7	0.42	26.7	7.05	4.50	48.4
VLA 70/102/140/154-6	17.1	0.67	40.4	10.67	4.27	46.0
VLA 70/89/140/154-6	23.4	0.92	52.4	13.84	4.04	43.5
VLA 70/85/140/154-6	25.4	1.00	55.8	14.74	3.97	42.7
VLA 52/76/140/154-6	29.8	1.17	63.0	16.64	3.85	41.4
VLA 52/70/140/154-6	32.9	1.30	32.9	8.69	3.74	40.3
VLA 70/89/140/154-6	19.6	0.77	42.3	11.17	3.86	41.5
VLA 70/89/140/154-6	19.6	0.77	42.3	11.17	3.81	41.0
VLA 85/129/154/168-6	10.5	0.41	29.2	7.71	5.03	54.1
VLA 70/114/154/168-6	17.9	0.70	47.1	12.44	4.77	51.3

Type	Gap		Volume in product gap		Heat transfer area	
	mm	inches	litres	US gallons	m <sup>2</sup>	ft <sup>2</sup>
VLA 70/102/154/168-6	24.2	0.95	60.7	16.04	4.54	48.9
VLA 70/89/154/168-6	30.6	1.20	72.8	19.23	4.31	46.4
VLA 129/168/206/219-6	15.9	0.63	58.2	15.37	6.68	71.9
VLA 102/140/206/219-6	30.2	1.19	102.2	27.00	6.16	66.3
VLA 102/129/206/219-6	35.5	1.40	116.5	30.78	5.97	64.3
VLA 89/114/206/219-6	42.9	1.69	134.3	35.48	5.71	61.5
VLA 85/102/206/219-6	49.2	1.94	148.0	39.10	5.48	59.0
VLA 70/168/206/219-6	30.2	1.19	102.2	27.00	6.68	71.9
VLA 70/140/206/219-6	15.9	0.63	58.2	15.37	6.16	66.3

All types are also available in 3 meter length. Other ViscoLine dimensions on request

**По вопросам продаж и поддержки обращайтесь:**

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