



## ViscoLine™ CIP Unit

The tubular heat exchanger series from Alfa Laval



ViscoLine CIP with open sectional view, hard corrugated

### Applications

The ViscoLine™ CIP unit is ideal for heating of water or CIP solutions by means of steam, non-hygienic heat exchange applications to process low and average viscosity products. Products can contain fibres and small particulates. Also suitable for general heating and cooling applications.

### 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.

All tubes are connected in parallel and in counter-current flow to the service medium. The product tubes can be corrugated to the hard or dimple patterns or can be smooth. The service media shell is smooth. The modules are normally connected in series and grouped on a common frame.

### Standard materials

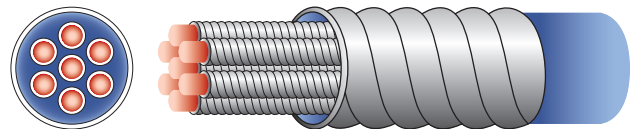
Product side (tubes): in AISI 316 or AISI 316L

Service side (shell): in AISI 304

Frame: in AISI 304

Vertical installation is recommended for steam to water heating (units can be angled for self draining on request).

Other materials are available on request.



Graphic representation of the flow pattern in the ViscoLine CIP Unit.

## Technical data

### Mechanical design pressure

16 bar (232 PSI) on tubes and shell side. Complies with the European Pressure Equipment Directive (PED), may carry the CE mark depending on the design connections. Design temperature 185°C (365°F).

Higher-pressure ratings are available and subject to a revision of component thickness and connection type. An expansion joint is fitted on every unit to absorb thermal expansion stresses.

### Connections

Product side (tubes):     DIN standard flanges and  
                                  ANSI flanges

Service side (shell):     DIN standard flanges  
                                  ANSI flanges

Other couplings on request.

### Options

Concentric reducers, welded to the shell.

Demountable headers by means of flanges.

Thermal insulation.



CIP unit with bigger capacities available on request

## Designation

VLC31x18/154-3.0-316L/304-H or D or S

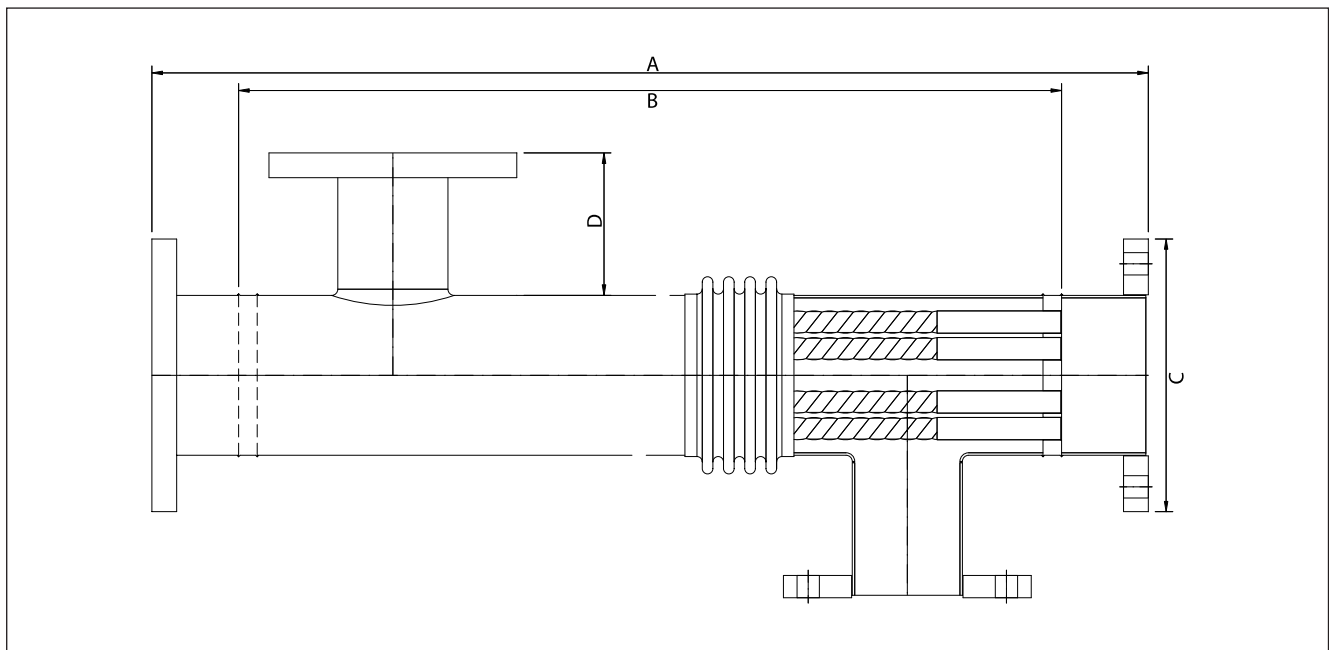
VLC: ViscoLine CIP  
 31: number of tubes  
 18: outer diameter of product tubes  
 154: outer diameter of service shell  
 3.0: module length (m)  
 316L: material tube side  
 304: material shell side  
 H: tubes are hard corrugated  
 D: tubes are dimple corrugated  
 S: tubes without corrugation (smooth)

## Designation

Type	No. of tubes	Tube Ø		Shell Ø		Module length		Volume tubes		Heat transfer area	
		mm	(inches)	mm	(inches)	m	(inches)	litres	(US gallons)	m <sup>2</sup>	(ft <sup>2</sup> )
VLC7x18/76-0,7	7	18	(0.71)	76	(2.99)	0.7	(28)	1.00	(0.26)	0.28	(2.99)
VLC7x18/76-1,5	7	18	(0.71)	76	(2.99)	1.5	(59)	2.10	(0.55)	0.59	(6.42)
VLC7x18/76-2,0	7	18	(0.71)	76	(2.99)	2.0	(79)	2.80	(0.74)	0.79	(8.55)
VLC7x18/76-3,0	7	18	(0.71)	76	(2.99)	3.0	(118)	4.20	(1.11)	1.19	(12.8)
VLC13x18/104-1,5	13	18	(0.71)	104	(4.09)	1.5	(59)	3.90	(1.03)	1.10	(11.9)
VLC13x18/104-2,0	13	18	(0.71)	104	(4.09)	2.0	(79)	5.20	(1.37)	1.47	(15.9)
VLC13x18/104-3,0	13	18	(0.71)	104	(4.09)	3.0	(118)	7.80	(2.06)	2.21	(23.8)
VLC19x18/129-1,5	19	18	(0.71)	129	(5.08)	1.5	(59)	5.80	(1.53)	1.61	(17.4)
VLC19x18/129-2,0	19	18	(0.71)	129	(5.08)	2.0	(79)	7.60	(2.01)	2.15	(23.2)
VLC19x18/129-3,0	19	18	(0.71)	129	(5.08)	3.0	(118)	11.5	(3.04)	3.22	(34.8)
VLC31x18/154-1,5	31	18	(0.71)	154	(6.06)	1.5	(59)	9.30	(2.46)	2.63	(28.4)
VLC31x18/154-2,0	31	18	(0.71)	154	(6.06)	2.0	(79)	12.4	(3.27)	3.51	(37.9)
VLC31x18/154-3,0	31	18	(0.71)	154	(6.06)	3.0	(118)	18.7	(4.94)	5.26	(56.8)
VLC37x18/168-1,5	37	18	(0.71)	168	(6.61)	1.5	(59)	11.2	(2.96)	3.14	(33.9)
VLC37x18/168-2,0	37	18	(0.71)	168	(6.61)	2.0	(79)	14.9	(3.93)	4.19	(45.2)
VLC37x18/168-3,0	37	18	(0.71)	168	(6.61)	3.0	(118)	22.3	(5.89)	6.28	(67.8)
VLC55x18/219-1,5	55	18	(0.71)	219	(8.62)	1.5	(59)	16.6	(4.38)	4.67	(50.4)
VLC55x18/219-2,0	55	18	(0.71)	219	(8.62)	2.0	(79)	22.1	(5.83)	6.22	(67.2)
VLC55x18/219-3,0	55	18	(0.71)	219	(8.62)	3.0	(118)	33.2	(8.76)	9.33	(100.8)
VLC61x18/219-1,5	61	18	(0.71)	219	(8.62)	1.5	(59)	18.4	(4.86)	5.17	(55.9)
VLC61x18/219-2,0	61	18	(0.71)	219	(8.62)	2.0	(79)	24.5	(6.47)	6.90	(74.5)
VLC61x18/219-3,0	61	18	(0.71)	219	(8.62)	3.0	(118)	36.8	(9.72)	10.3	(111.8)

Measurement in mm (inches)

Type	A		B		C		D		Shell side	Tube side
	mm	(inches)	mm	(inches)	mm	(inches)	mm	(inches)		
VLC7x18/76-0,7	825	(32)	689	(27)	186	(7.3)	115	(4.5)	DN 40	DN 65
VLC7x18/76-1,5	1575	(62)	1439	(57)	186	(7.3)	115	(4.5)	DN 40	DN 65
VLC7x18/76-2,0	2075	(82)	1939	(76)	186	(7.3)	115	(4.5)	DN 40	DN 65
VLC7x18/76-3,0	3075	(121)	2939	(116)	186	(7.3)	115	(4.5)	DN 40	DN 65
VLC13x18/104-1,5	1579	(62,2)	1439	(56,7)	200	(7,9)	115	(4,5)	DN 65	DN 80
VLC13x18/104-2,0	2079	(82)	1939	(76)	200	(7,9)	113.8	(4,5)	DN 65	DN 80
VLC13x18/104-3,0	3079	(121)	2939	(116)	200	(7,9)	113.8	(4,5)	DN 65	DN 80
VLC19x18/129-1,5	1579	(62,2)	1439	(56,7)	220	(8,7)	115	(4,5)	DN 80	DN 100
VLC19x18/129-2,0	2079	(82)	1939	(76)	220	(8,7)	115	(4,5)	DN 80	DN 100
VLC19x18/129-3,0	3079	(121)	2939	(116)	220	(8,7)	115	(4,5)	DN 80	DN 100
VLC31x18/154-1,5	1583	(62)	1439	(57)	250	(9,8)	115	(4,5)	DN 80	DN 125
VLC31x18/154-2,0	2083	(82)	1939	(76)	250	(9,8)	115	(4,5)	DN 80	DN 125
VLC31x18/154-3,0	3083	(121)	2939	(116)	250	(9,8)	115	(4,5)	DN 80	DN 125
VLC37x18/168-1,5	1583	(62)	1439	(57)	250	(9,8)	115	(4,5)	DN 80	DN 125
VLC37x18/168-2,0	2083	(82)	1939	(76)	250	(9,8)	115	(4,5)	DN 80	DN 125
VLC37x18/168-3,0	3083	(121)	2939	(116)	250	(9,8)	115	(4,5)	DN 80	DN 125
VLC55x18/219-1,5	1587	(62)	1439	(57)	340	(13,4)	143.5	(5,6)	DN 125	DN 200
VLC55x18/219-2,0	2087	(82)	1939	(76)	340	(13,4)	143.5	(5,6)	DN 125	DN 200
VLC55x18/219-3,0	3087	(122)	2939	(116)	340	(13,4)	143.5	(5,6)	DN 125	DN 200
VLC61x18/219-1,5	1587	(62)	1439	(57)	340	(13,4)	143.5	(5,6)	DN 125	DN 200
VLC61x18/219-2,0	2087	(82)	1939	(76)	340	(13,4)	143.5	(5,6)	DN 125	DN 200
VLC61x18/219-3,0	3087	(122)	2939	(116)	340	(13,4)	143.5	(5,6)	DN 125	DN 200



**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](http://www.alfalaval.com)