Alfa Laval SHE LTL

Standard spiral heat exchanger for liquid-to-liquid duties

Introduction

Engineered for liquid-to-liquid duties, the Alfa Laval SHE LTL is a spiral heat exchanger with curved channels to provide optimum heat transfer and flow conditions for a wide variety of fluids. This spiral heat exchanger range offers a broad spectrum of standard models with a wide variety of diameters and heat transfer surface areas and can be used to handle fouling fluids at medium pressures.

Applications

The Alfa Laval SHE LTL range is suitable for heating, cooling and heat recovery in applications where there is a high risk of fouling and where minimized operational downtime for cleaning is crucial.

Their high heat transfer efficiency often makes them suitable for replacing shell & tubes or other types of heat exchangers where fouling risk or down time for cleaning are important.

Benefits

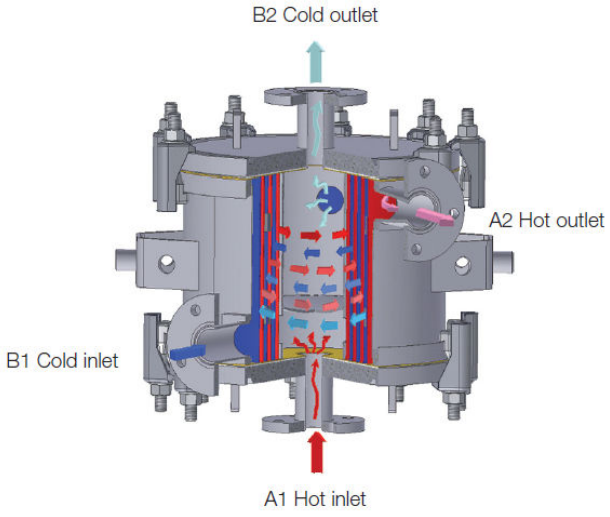
- Drastically reduced fouling thanks to the single channel design with its self-cleaning effect
- Easy inspection and mechanical cleaning (hydro-blasting) of the heat transfer surface
- Minimal operational downtime thanks to the longer intervals between cleaning and the ease of putting the unit back into operation after cleaning
- Highly efficient heat recovery thanks to true countercurrent flow
- Compact and flexible design that can be installed horizontally or vertically

Working principle

The Alfa Laval SHE LTL spiral is made of two concentric spiral flow channels in which the media are in full counter current flow. The hot medium generally enters at the centre of the unit and flows from the inside outwards to exit at the periphery. The cold fluid enters normally at the periphery and flows towards the centre, thereby achieving counter flow. Counter current flow combined with optimal flow conditions in both channels obtains higher heat transfer coefficients than in many other types of heat exchangers. Close temperature approaches and temperature crosses are easily achieved.

The single channel design reduces drastically fouling and eliminates bypassing. Unlike multiple pass heat exchangers in which partial clogging redirects the flow through the remaining open channels, the velocity in the single channel spiral increases until deposits are scrubbed away.

The entire heat transfer surface is accessible for inspection, hydro blasting or mechanical cleaning simply by removing the covers. Chemical cleaning is also very efficient since the cleaning solution cannot bypass into open tubes.



Technical data

Maximum Allowable Working Pressure (with full vacuum)

Model	100 (212)	200 (392)	300 (572)	400 (752)	°C (°F)
2S	12 (174)	10,5 (152)	9 (130)	6 (87)	barg (psig)
2L	12 (174)	10,5 (152)	9 (130)	6 (87)	barg (psig)
4S	10,5 (152)	10,5 (152)	9 (130)	6 (87)	barg (psig)
4L	10,5 (152)	10,5 (152)	9 (130)	6 (87)	barg (psig)
8S	10,5 (152)	10,5 (152)	9 (130)	6 (87)	barg (psig)
8L	10,5 (152)	10,5 (152)	9 (130)	6 (87)	barg (psig)
13S	10,5 (152)	10,5 (152)	9 (130)	6 (87)	barg (psig)
30L	10,5 (152)	10 (145)	8,5 (123)	6 (87)	barg (psig)

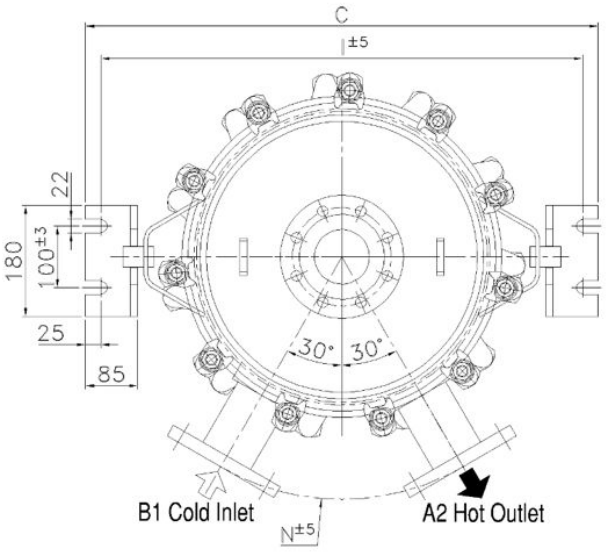
Minimum design temperature: –40°C (–40 °F)

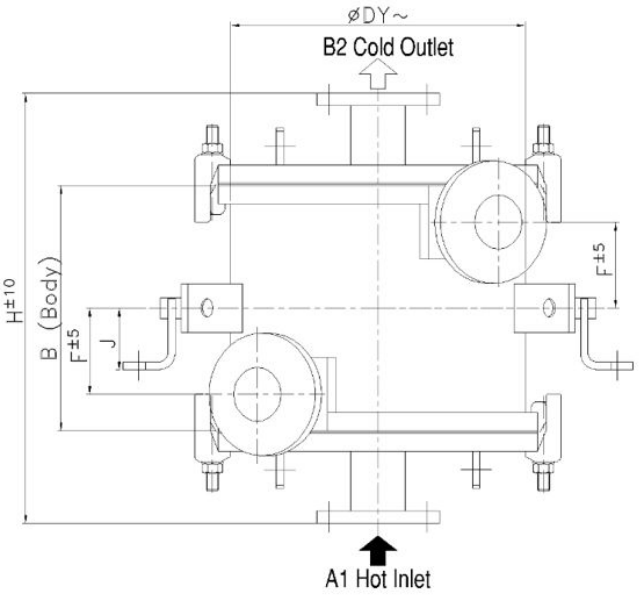
Other design conditions may be available on request.

Standard materials	
Heat transfer surface	316L
Shell	316L except covers in Carbon steel lined with 316L
Gaskets	Nitrile-bonded fibre
Flange	316L (EN 1092-1 PN16 / ASME B16,5 150 lbs)

Design according to ASME VIII div.1 and to PED

	Heat transfer area	Dy	H	Spacing	Nozzles	Weight (empty)
Model	m2 (ft2)	mm (inch)	mm (inch)	mm (inch)	mm (inch)	kg (lbs)
2S	2 (21)	425 (17)	500 (20)	A=B= 5 (0.2)	50 (2)	185 (408)
2L	2,1 (23)	425 (17)	600 (24)	A=B=8 (0.3)	50 (2)	195 (430)
4S	4,3 (46)	480 (19)	600 (24)	A=B= 5 (0.2)	50 (2)	285 (628)
4L	4 (43)	480 (19)	700 (27)	A=B=8 (0.3)	80 (3)	290 (639)
8S	8 (86)	540 (21)	700 (27)	A=B= 5 (0.2)	50 (2)	420 (926)
8L	8,8 (95)	540 (21)	925 (36)	A=B=8 (0.3)	80 (3)	460 (1014)
13S	13,5 (140)	645 (25)	800 (31)	A=B= 6 (0.24)	80 (3)	680 (1500)
30L	29,3 (315)	825 (32)	1400 (55)	A=12 (0.5)/B=10 (0.4)	100 (4)	1380 (3042)





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How to contact Alfa Laval

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