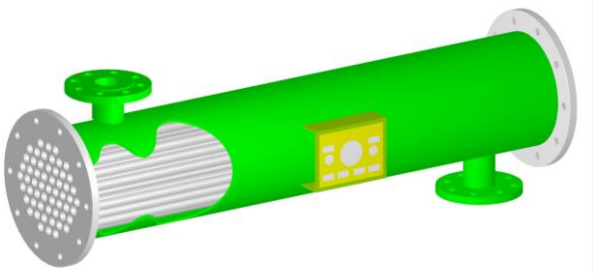
E Series - BIOGAS / WATER EXCHANGERS

GREEN line

E/E	
02	2020

STRAIGHT TUBES – HIGH EFFICIENCY WITH TURBOLATORS





DESCRIPTION

The E Series smooth tubes exchangers, high efficiency with helical turbolators inside the tubes (for tubes Ø18 version only), offer a technological solution in the Biogas / Water thermal exchange. They are used to dry the biogas by anaerobic digesters (tube side), which is saturated with water steam with low temperature water and glycol (shell side).
Also available the Biogas (tube side) and Biogas (shell side) version, suitable for Biogas heating following the drying section.

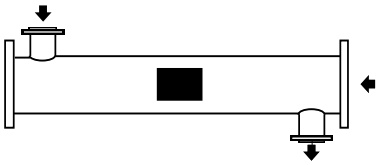
They are designed with basic calculation code EN 13445 Ed. 2014 and comply with PED 2014/68/UE.

One step configuration with PN10/16 flanged tube plates.
Smooth tubes welded to tube plates with helical turbolators inside.
Stainless steel AISI 304 or AISI 316 tube side
Carbon steel or Stainless steel AISI 304/316 shell side

Always install a "Demister" condenser separator downstream or a traditional separator.

ATEX 2014/34/UE
II 2G/D Exh IIB T6….T1 – Exh IIIC T6….T1 Gb
Non-electrical equipment for potentially explosive atmospheres.

PED 2014/68/UE	***ATEX***
Art.4 Par.3 Shell Side ***Tube Side PED free***	***II 2G/D Exh IIB T6….T1 Gb*** ***Exh IIIC T6….T1 Gb*** ***CE 1370***

BUILDING CONTRUCTION (1)

Tube Side Connections PN 10 or PN 16 Shell Side connections PN 16

DESIGN PRESSURES	
Tube Side	**Shell Side**
0,5 bar @ 0 / +99 °C	**12 bar @ -5 / +110 °C**

Note (1) Possibility to have shell side connections on the same side

Other design pressures on request

CONFLOW s.p.a.

COMPANY WITH QUALITY SYSTEM CERTIFIED BY DNV GL = ISO 9001 =

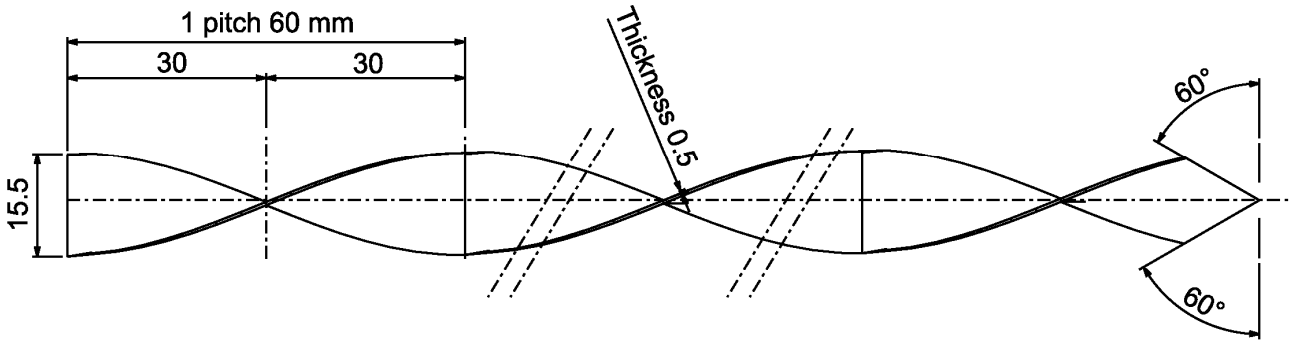
Via Lecco, 69/71
20864 AGRATE BRIANZA (MB)
Tel. 039/651.705 - 650.397
Fax 039/654.018
e-mail: sales@conflow.it

CONFIGURATION - materials

Tubes plates **Flanged EN 1092-1 PN 10/16**	Stainless Steel AISI 304L
	Stainless Steel AISI 316L
	Other materials on request

Smooth tubes **Welded on tube plates**	**Ø**		
	10 x 1 **On request**	**12 x 1** **On request**	**18 x 1** **STD**
	Stainless Steel AISI 304L A249		
	Stainless Steel AISI 316L A249		
	Other materials and dimensions on request		

Turbolators **Inside the tubes** **Available on Ø18 tubes version only**	**Ø**
	18 x 1
	Stainless Steel AISI 304L
	On request Stainless Steel AISI 316L



The versions with turbolators must be installed horizontally. In the case of vertical installation it is necessary to ask for a special version of turbolators with stopper at the top

Shell	Carbon Steel
	Stainless Steel AISI 304L
	Stainless Steel AISI 316L

Baffles	Carbon Steel
	Acciaio Inox AISI 304L
	Acciaio Inox AISI 304L

Data plate support	Carbon Steel (with Carbon Steel shell)
	Stainless Steel AISI 304 (with Stainless Steel shell)
Targa	Alluminium
	Stainless Steel AISI 304 on request

ACCESSORIES ON REQUEST

Supports	Carbon Stell
	Stainless Steel AISI 304
	Stainless Steel AISI 316

Lifting rings	Carbon Stell
	Stainless Steel AISI 304

Products Codification System

Example Code

VE	0	10	10	P00	10	X1	TX

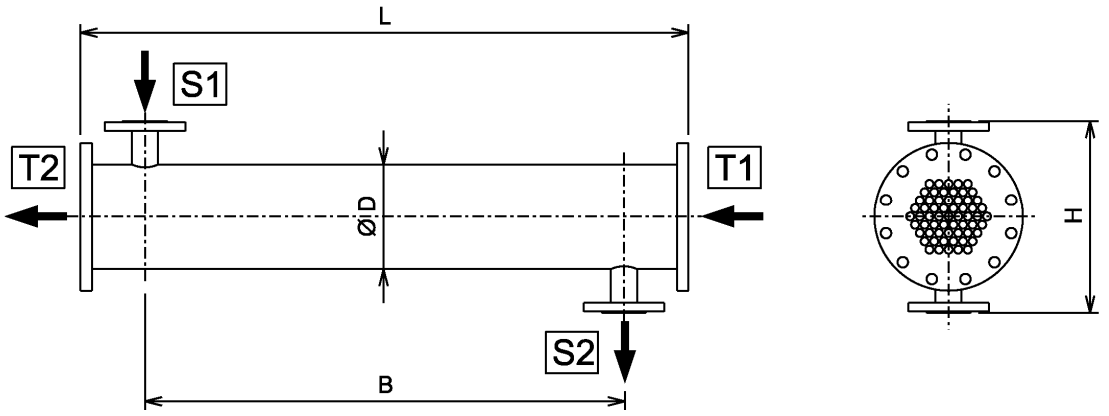
Series identification	Ø Exchanger		Exchanger lenght		N° baffles		Design pressure (bar)		Ø tube		Ø turbolators		Turbolators material	
	C	Ø 60,3	10	1000	04	4	P00	0.5	10	10	X40	AISI 304	00	Without turbolators
	B	Ø 76,3	12	1200	06	6			12	12	X10	Tubes, plates A304, other carbon steel	TX	Turbolators AISI 304
	A	Ø 88,9	15	1500	08	8			18	18	K40	AISI 316	TK	Turbolators AISI 316
	1	Ø 133	20	2000	10	10					K10	Tubes, plates A316, other carbon steel		
	2	Ø 168	25	2500	12	12					Y00	Special materials		
	3	Ø 219	30	3000	14	14								
	4	Ø 273			16	16								
	5	Ø 324			18	18								
	6	Ø 356			20	20								
	7	Ø 406			22	22								
	8	Ø 456			24	24								
	9	Ø 508			26	26								
	L	Ø 550			28	28								
	M	Ø 610			30	30								
	N	Ø 650			32	32								
	P	Ø 700			34	34								
	Q	Ø 750			36	36								
	R	Ø 800			38	38								
					40	40								

Follows code

100	00	00

% Turbolators		Shell side connections		Supports	
000	0 %	A	STD	00	Standard
025	25 %	B	1° increase	01	Horizontal Carbon Steel
050	50 %	C	2° increase	02	Horizontal AISI 304
075	75 %	L	Same side connections	03	Horizontal Lifting rings Carbon Steel
100	100 %	M	1° decrease	04	Horizontal Lifting rings Aisi304
		N	2° decrease		
		Y	Specials		

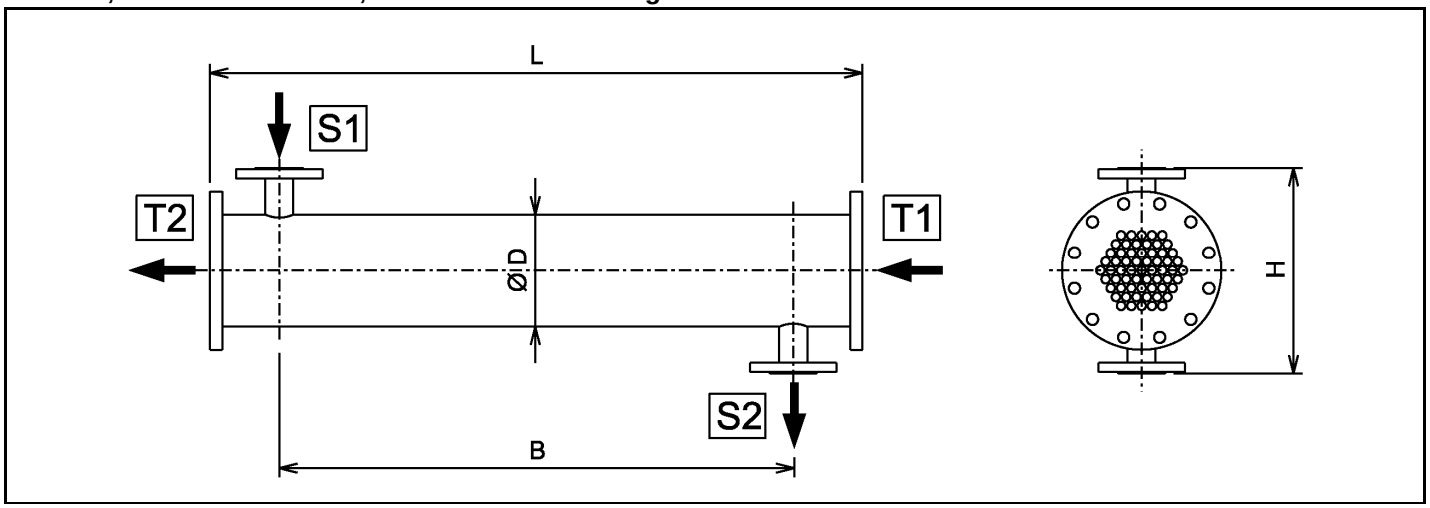
Models, Dimensions in mm, Connections and Weight



Measure	Model	Ø D	L	B	H	Head connections EN 1092-1 T1 – T2	Shell connections EN 1092-1 PN16 (1) S1- S2	Weight Kg Tubes Ø18 (4 baffles) With turbolators
C	10	60.3	1000	860	220	DN 50 PN 16	DN 15	16
	12		1200	1060				17
	15		1500	1360				19
	20		2000	1860				24
	25		2500	2360				27
	30		3000	2860				31
B	10	76.3	1000	860	240	DN 65 PN 16	DN 20	24
	12		1200	1060				25
	15		1500	1360				29
	20		2000	1860				36
	25		2500	2360				42
	30		3000	2860				49
A	10	88.9	1000	850	250	DN 80 PN 16	DN 20	29
	12		1200	1050				32
	15		1500	1350				37
	20		2000	1850				45
	25		2500	2350				54
	30		3000	2850				60
0	10	114.3	1000	830	280	DN 100 PN 10	DN 25	39
	12		1200	1030				45
	15		1500	1330				53
	20		2000	1830				66
	25		2500	2330				80
	30		3000	2830				92
1	10	139.7	1000	820	300	DN 125 PN 10	DN 25	51
	12		1200	1020				57
	15		1500	1320				66
	20		2000	1820				83
	25		2500	2320				99
	30		3000	2820				115
2	10	168.3	1000	820	330	DN 150 PN 10	DN 25	67
	12		1200	1020				76
	15		1500	1320				90
	20		2000	1820				113
	25		2500	2320				135
	30		3000	2820				197
3	10	219.1	1000	790	380	DN 200 PN 10	DN 40	96
	12		1200	990				108
	15		1500	1290				128
	20		2000	1790				159
	25		2500	2290				189
	30		3000	2790				221

(1) Other connections on request

Models, Dimensions in mm, Connections and Weight



Measure	Model	Ø D	L	B	H	Head connections EN 1092-1 T1 – T2	Shell connections EN 1092-1 PN16 (1) S1- S2	Weight Kg Tubes Ø18 (4 baffles) With turbolators
4	10	273	1000	770	460	DN 250 PN 10	DN 50	134
	12		1200	970				147
	15		1500	1270				178
	20		2000	1770				221
	25		2500	2270				264
	30		3000	2770				308
5	10	323.8	1000	750	540	DN 300 PN 10	DN 65	173
	12		1200	950				195
	15		1500	1250				229
	20		2000	1750				286
	25		2500	2250				342
	30		3000	2750				399
6	10	355.6	1000	750	580	DN 350 PN 10	DN 65	225
	12		1200	950				255
	15		1500	1250				300
	20		2000	1750				376
	25		2500	2250				451
	30		3000	2750				526
7	10	406.4	1000	750	640	DN 400 PN 10	DN 65	285
	12		1200	950				325
	15		1500	1250				384
	20		2000	1750				438
	25		2500	2250				582
	30		3000	2750				680
8	10	457.2	1000	730	690	DN 450 PN 10	DN 80	361
	12		1200	930				404
	15		1500	1230				477
	20		2000	1730				600
	25		2500	2230				723
	30		3000	2730				846
9	10	508	1000	730	760	DN 500 PN 10	DN 80	425
	12		1200	930				484
	15		1500	1230				574
	20		2000	1730				723
	25		2500	2230				872
	30		3000	2730				1019

(1) Other connections on request

On request, we can dimension and supply exchanger on commission

Measure L	Ø 550
Measure M	Ø 610
Measure N	Ø 650
Measure P	Ø 700
Measure Q	Ø 750
Measure R	Ø 800