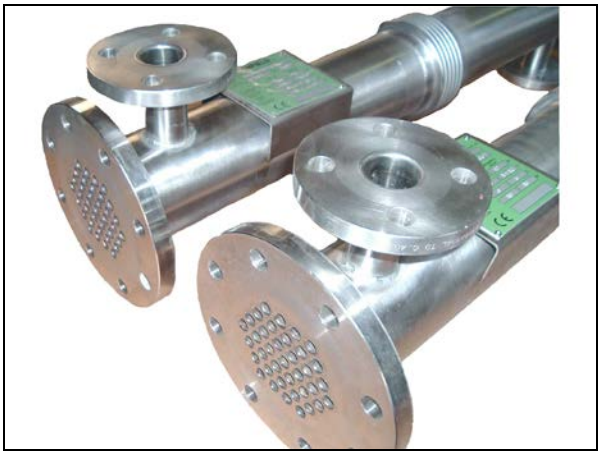
CORRUGATED TUBES – HIGH EFFICIENCY



DESCRIPTION

The heat exchangers HEC series with corrugated tubes, offer a solution of high efficiency in heat exchange.

Corrugation is a special machining that is carried out on the smooth tube, in order to obtain an internal surface able to create a turbulent flow.
By the “HARD” corrugation, the coefficient of heat exchange is hardly increased compared to conventional heat exchangers.

They can be used on a wide range of heat transfer fluids:
Steam – Water
Steam – Superheated water
Superheated water – Water
Steam and water – Food fluids

Our HEC heat exchangers are one step configurated with PN16 flanged tube plates and a welded shell with expansion joint of over one meter length.

They are designed and manufactured in accordance with the following Directives:

PED 2014/68/UE with basic calculation code EN13445 Part III.
They are classified with different risk categories, depending on the design pressure, on the circuit volumes or compartments, and on the fluid types.
The following tables shows all configurations of the categories as a function of the fluid groups.

ATEX 2014/34/UE II 2G/D cTx – Non-electrical equipment for potentially explosive atmospheres.

A right configuration provides a wide choice of materials in the field of stainless steel. Other materials are available on request.

The great heat efficiency grant an high compactness and a good installation flexibility due to the reduced encumbrance.

PED	***ATEX***
Various modules	***II 2 G/D cTx***
CE 1214	***CE 1370***

CONFIGURATION - materials

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

HARD corrugated tubes **Welded on tube plates** **Welded and rolled on request**	**Ø mm**			
	10 x 1	**12 x 1**	**14 x 1**	**18 x 1**
	Stainless Steel AISI 304L A249			
	Stainless Steel AISI 316L A249			
	Other materials and dimensions on request			

Shell	Stainless Steel AISI 304L
	Stainless Steel AISI 316L
	Other materials on request

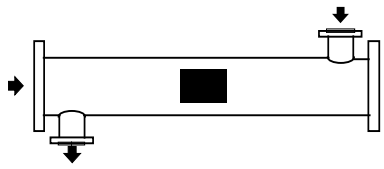
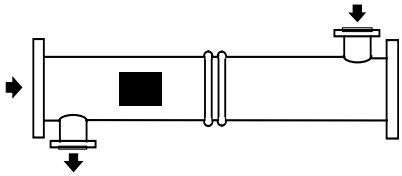
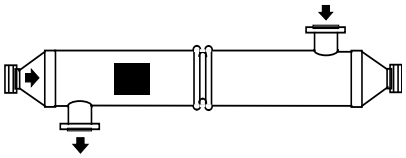
Expansion joint	Stainless Steel AISI 316L

Baffles **Starting from 3m lenght**	Stainless Steel AISI 304L
	Stainless Steel AISI 316L
	Other materials on request

Plate support	Stainless Steel AISI 304L
Plate	Alluminium

ACCESSORIES ON REQUEST

Supports	Stainless Steel AISI 304
	Stainless Steel AISI 316

CONSTRUCTION CONFIGURATION		
		
HEC without expansion joint PN16 flanged connections	**HECG** with expansion joint PN16 flanged connections	**HEC / HECG** DIN 11851 food connections

DESIGN PRESSURES (1)			
Tube Side		**Shell Side**	
12 bar @ 0 / + 110 °C	**12 bar @ 0 / + 191.7 °C**	**12 bar @ 0 / + 110 °C**	**12 bar @ 0/ + 191.7 °C**

Note (1) Other design pressures on request

Products Codification System

Example code

VHE	C	G	0	10	00	P12	18	X40	P16	A

Series identification

Tube execution

C	Corrugated
L	Smooth

Joint

0	None
G	Joint

Ø exchanger

C	Ø 60,3
B	Ø 76,3
A	Ø 88,9
1	Ø 133
2	Ø 168
3	Ø 219
4	Ø 273
5	Ø 324
6	Ø 356
7	Ø 406

Exchanger lenght

10	950
12	1150
15	1450
20	1950
25	2450
30	2950
40	3930
50	4930
60	5930

N° baffles

00	None
02	2
04	4

Design pressure (bar)

P12	12

Ø Tubes

10	10
12	12
14	14
18	18

Materials

X40	AISI 304 Stainless Steel
X2K	Tubes an plates AISI 304 Shell AISI 316
K2X	Tubes an plates AISI 316 Shell AISI 304
K40	AISI 316 Stainless Steel
Y00	Special materials

Tube side connections

P16	PN 16
D40	DIN 11851 DN 40
D50	DIN 11851 DN 50
D65	DIN 11851 DN 65
D80	DIN 11851 DN 80
D10	DIN 11851 DN 1000

Shell side connections

A	Standard
B	N°2 same DN
C	90° Standard
D	90° N°2 same DN
E	SIDE N°2 same DN
I	180 ° Standard
L	SIDE Standard
Y	SPECIALS

CONFIGURATION - PED – design pressures and risk categories (tables–groups)
Group 2 Fluids

T.S. = Tube Side S.S. = Shell Side

Size	C – Ø 60,3								
Suffix	**10**	**12**	**15**	**20**	**25**	**30**	**40**	**50**	**60**
Tubes lenght mm	950	1150	1450	1950	2450	2950	3930	4930	5930

Tube	Design pressure	Side	Risk categories	
Ø 18 x 1	**12 bar @ 110 °C (1)**	T.S.	Tab. 4 – 4/3	
	12 bar @ 191.7 °C	S.S.	Tab. 2 – 4/3	Tab. 2 – Cat. I°
	12 bar @ 110 °C (1)	T.S.+S.S.	Tab. 4 – 4/3	
	12 bar @ 191.7 °C		Tab. 2 – 4/3	Tab. 2 – Cat. I°
Ø 14 x 1	**12 bar @ 110 °C (1)**	T.S.	Tab. 4 – 4/3	
	12 bar @ 191.7 °C	S.S.	Tab. 2 – 4/3	Tab. 2 – Cat. I°
	12 bar @ 110 °C (1)	T.S.+S.S.	Tab. 4 – 4/3	
	12 bar @ 191.7 °C		Tab. 2 – 4/3	Tab. 2 – Cat. I°
Ø 12 x 1	**12 bar @ 110 °C (1)**	T.S.	Tab. 4 – 4/3	
	12 bar @ 191.7 °C	S.S.	Tab. 2 – 4/3	Tab. 2 – Cat. I°
	12 bar @ 110 °C (1)	T.S.+S.S.	Tab. 4 - Art. 4 Par.3	
	12 bar @ 191.7 °C		Tab. 2 – 4/3	Tab. 2 – Cat. I°
Ø 10 x 1	**12 bar @ 110 °C (1)**	T.S.	Tab. 4 – 4/3	
	12 bar @ 191.7 °C	S.S.	Tab. 2 – 4/3	Tab. 2 – Cat. I°
	12 bar @ 110 °C (1)	T.S.+S.S.	Tab. 4 – 4/3	
	12 bar @ 191.7 °C		Tab. 2 – 4/3	Tab. 2 – Cat. I°

(1) Liquids with vapour tension ≤ 0,5 barg @ 110,0 °C

CONFIGURATION - PED – design pressures and risk categories (tables–groups)
Group 2 Fluids

T.S. = Tube Side S.S. = Shell Side

Misura	B – Ø 76,3								
Suffisso	**10**	**12**	**15**	**20**	**25**	**30**	**40**	**50**	**60**
Lunghezza tubi mm	950	1150	1450	1950	2450	2950	3930	4930	5930

Tube	Design pressure	Side	Risk categories	
Ø 18 x 1	**12 bar @ 110 °C (1)**	T.S.	Tab. 4 – 4/3	
	12 bar @ 191.7 °C	S.S.	Tab. 2 – 4/3	Tab. 2 – Cat. I°
	12 bar @ 110 °C (1)	T.S.+S.S.	Tab. 4 – 4/3	
	12 bar @ 191.7 °C		Tab. 2 – 4/3	Tab. 2 – Cat. I°
Ø 14 x 1	**12 bar @ 110 °C (1)**	T.S.	Tab. 4 – 4/3	
	12 bar @ 191.7 °C	S.S.	Tab. 2 – 4/3	Tab. 2 – Cat. I°
	12 bar @ 110 °C (1)	T.S.+S.S.	Tab. 4 – 4/3	
	12 bar @ 191.7 °C		Tab. 2 – 4/3	Tab. 2 – Cat. I°
Ø 12 x 1	**12 bar @ 110 °C (1)**	T.S.	Tab. 4 – 4/3	
	12 bar @ 191.7 °C	S.S.	Tab. 2 – 4/3	Tab. 2 – Cat. I°
	12 bar @ 110 °C (1)	T.S.+S.S.	Tab. 4 – 4/3	
	12 bar @ 191.7 °C		Tab. 2 – 4/3	Tab. 2 – Cat. I°
Ø 10 x 1	**12 bar @ 110 °C (1)**	T.S.	Tab. 4 – 4/3	
	12 bar @ 191.7 °C	S.S.	Tab. 2 – 4/3	Tab. 2 – Cat. I°
	12 bar @ 110 °C (1)	T.S.+S.S.	Tab. 4 – 4/3	
	12 bar @ 191.7 °C		Tab. 2 – 4/3	Tab. 2 – Cat. I°

(1) Liquids with vapour tension ≤ 0,5 barg @ 110,0 °C

CONFIGURATION - PED – design pressures and risk categories (tables–groups)
Groups 2 Fluids

T.S. = Tube Side S.S. = Shell side

Size	A – Ø 88,9								
Suffix	**10**	**12**	**15**	**20**	**25**	**30**	**40**	**50**	**60**
Tubes lenght mm	950	1150	1450	1950	2450	2950	3930	4930	5930

Tube	Design Pressure	Side	Risk categories		
Ø 18 x 1	**12 bar @ 110 °C (1)**	T.S.	Tab. 4 – 4/3		
	12 bar @ 191.7 °C	S.S.	Tab. 2 4/3	Tab. 2 – Cat. I°	Tab. 2 II°
	12 bar @ 110 °C (1)	T.S.+S.S.	Tab. 4 – 4/3		
	12 bar @ 191.7 °C		Tab. 2 4/3	Tab. 2 – Cat. I°	Tab. 2 II°
Ø 14 x 1	**12 bar @ 110 °C (1)**	T.S.	Tab. 4 – 4/3		
	12 bar @ 191.7 °C	S.S.	Tab. 2 4/3	Tab. 2 – Cat. I°	Tab. 2 Cat. II°
	12 bar @ 110 °C (1)	T.S.+S.S.	Tab. 4 – 4/3		
	12 bar @ 191.7 °C		Tab. 2 4/3	Tab. 2 – Cat. I°	Tab. 2 Cat. II°
Ø 12 x 1	**12 bar @ 110 °C (1)**	T.S.	Tab. 4 – 4/3		
	12 bar @ 191.7 °C	S.S.	Tab. 2 4/3	Tab. 2 – Cat. I°	Tab. 2 Cat. II°
	12 bar @ 110 °C (1)	T.S.+S.S.	Tab. 4 - Art. 4 Par.3		
	12 bar @ 191.7 °C		Tab. 2 4/3	Tab. 2 – Cat. I°	Tab. 2 Cat. II°
Ø 10 x 1	**12 bar @ 110 °C (1)**	T.S.	Tab. 4 – 4/3		
	12 bar @ 191.7 °C	S.S.	Tab. 2 4/3	Tab. 2 – Cat. I°	Tab. 2 II°
	12 bar @ 110 °C (1)	T.S.+S.S.	Tab. 4 – 4/3		
	12 bar @ 191.7 °C		Tab. 2 4/3	Tab. 2 – Cat. I°	Tab. 2 II°

(1) LiquidS with vapour tension ≤ 0,5 barg @ 110,0 °C

CONFIGURATION - PED – design pressures and risk categories (tables–groups)
Group 2 fluids

T.S. = Tube Side S.S. = Shell Side

Size	0 – Ø 114,3								
Suffix	10	12	15	20	25	30	40	50	60
Tube lenght mm	950	1150	1450	1950	2450	2950	3930	4930	5930

Tube	Design pressure	Side	Risk categories	
Ø 18 x 1	12 bar @ 110 °C (1)	T.S.	Tab. 4 – 4/3	
	12 bar @ 191.7 °C	S.S.	Tab. 2 - Cat. I°	Tab. 2 – Cat. II°
	12 bar @ 110 °C (1)	T.S.+S.S.	Tab. 4 – 4/3	
	12 bar @ 191.7 °C		Tab. 2 - Cat. I°	Tab. 2 – Cat. II°
Ø 14 x 1	12 bar @ 110 °C (1)	T.S.	Tab. 4 – 4/3	
	12 bar @ 191.7 °C	S.S.	Tab. 2 - Cat. I°	Tab. 2 – Cat. II°
	12 bar @ 110 °C (1)	T.S.+S.S.	Tab. 4 – 4/3	
	12 bar @ 191.7 °C		Tab. 2 - Cat. I°	Tab. 2 – Cat. II°
Ø 12 x 1	12 bar @ 110 °C (1)	T.S.	Tab. 4 – 4/3	
	12 bar @ 191.7 °C	S.S.	Tab. 2 - Cat. I°	Tab. 2 – Cat. II°
	12 bar @ 110 °C (1)	T.S.+S.S.	Tab. 4 – 4/3	
	12 bar @ 191.7 °C		Tab. 2 - Cat. I°	Tab. 2 – Cat. II°
Ø 10 x 1	12 bar @ 110 °C (1)	T.S.	Tab. 4 – 4/3	
	12 bar @ 191.7 °C	S.S.	Tab. 2 - Cat. I°	Tab. 2 – Cat. II°
	12 bar @ 110 °C (1)	T.S.+S.S.	Tab. 4 – 4/3	
	12 bar @ 191.7 °C		Tab. 2 - Cat. I°	Tab. 2 – Cat. II°

(1) Liquids with vapour tension ≤ 0,5 barg @ 110,0 °C

CONFIGURATION - PED – design pressures and risk categories (tables–groups)
Group 2 Fluids

T.S. = Tube Side S.S. = Shell Side

Size	1 – Ø 139,7								
Suffix	**10**	**12**	**15**	**20**	**25**	**30**	**40**	**50**	**60**
Tube lenght mm	950	1150	1450	1950	2450	2950	3930	4930	5930

Tube	Design pressure	Side	Risk categories	
Ø 18 x 1	**12 bar @ 110 °C (1)**	T.S.	Tab. 4 – 4/3	
	12 bar @ 191.7 °C	S.S.	Tab. 2 - Cat. I°	Tab. 2 – Cat. II°
	12 bar @ 110 °C (1)	T.S.+S.S.	Tab. 4 – 4/3	
	12 bar @ 191.7 °C		Tab. 2 - Cat. I°	Tab. 2 – Cat. II°
Ø 14 x 1	**12 bar @ 110 °C (1)**	T.S.	Tab. 4 – 4/3	
	12 bar @ 191.7 °C	S.S.	Tab. 2 - Cat. I°	Tab. 2 – Cat. II°
	12 bar @ 110 °C (1)	T.S.+S.S.	Tab. 4 – 4/3	
	12 bar @ 191.7 °C		Tab. 2 - Cat. I°	Tab. 2 – Cat. II°
Ø 12 x 1	**12 bar @ 110 °C (1)**	T.S.	Tab. 4 – 4/3	
	12 bar @ 191.7 °C	S.S.	Tab. 2 - Cat. I°	Tab. 2 – Cat. II°
	12 bar @ 110 °C (1)	T.S.+S.S.	Tab. 4 – 4/3	
	12 bar @ 191.7 °C		Tab. 2 - Cat. I°	Tab. 2 – Cat. II°
Ø 10 x 1	**12 bar @ 110 °C (1)**	T.S.	Tab. 4 – 4/3	
	12 bar @ 191.7 °C	S.S.	Tab. 2 - Cat. I°	Tab. 2 – Cat. II°
	12 bar @ 110 °C (1)	T.S.+S.S.	Tab. 4 – 4/3	
	12 bar @ 191.7 °C		Tab. 2 - Cat. I°	Tab. 2 – Cat. II°

(1) Liquids with vapour tension ≤ 0,5 barg @ 110,0 °C

CONFIGURATION - PED – design pressures and risk categories (tables–groups)
Group 2 Fluids

T.S. = Tube Side S.S. = Shell Side

Size	2 – Ø 168,3								
Suffix	**10**	**12**	**15**	**20**	**25**	**30**	**40**	**50**	**60**
Tube lenght mm	950	1150	1450	1950	2450	2950	3930	4930	5930

Tube	Design pressure	Side	Risk categories	
Ø 18 x 1	**12 bar @ 110 °C (1)**	T.S.	Tab. 4 – 4/3	
	12 bar @ 191.7 °C	S.S.	Tab. 2 - Cat. I°	Tab. 2 – Cat. II°
	12 bar @ 110 °C (1)	T.S.+S.S.	Tab. 4 – 4/3	
	12 bar @ 191.7 °C		Tab. 2 - Cat. I°	Tab. 2 – Cat. II°
Ø 14 x 1	**12 bar @ 110 °C (1)**	T.S.	Tab. 4 – 4/3	
	12 bar @ 191.7 °C	S.S.	Tab. 2 - Cat. I°	Tab. 2 – Cat. II°
	12 bar @ 110 °C (1)	T.S.+S.S.	Tab. 4 – 4/3	
	12 bar @ 191.7 °C		Tab. 2 - Cat. I°	Tab. 2 – Cat. II°
Ø 12 x 1	**12 bar @ 110 °C (1)**	T.S.	Tab. 4 – 4/3	
	12 bar @ 191.7 °C	S.S.	Tab. 2 - Cat. I°	Tab. 2 – Cat. II°
	12 bar @ 110 °C (1)	T.S.+S.S.	Tab. 4 – 4/3	
	12 bar @ 191.7 °C		Tab. 2 - Cat. I°	Tab. 2 – Cat. II°
Ø 10 x 1	**12 bar @ 110 °C (1)**	T.S.	Tab. 4 – 4/3	
	12 bar @ 191.7 °C	S.S.	Tab. 2 - Cat. I°	Tab. 2 – Cat. II°
	12 bar @ 110 °C (1)	T.S.+S.S.	Tab. 4 – 4/3	
	12 bar @ 191.7 °C		Tab. 2 - Cat. I°	Tab. 2 – Cat. II°

(1) Liquids with vapour tension ≤ 0,5 barg @ 110,0 °C

CONFIGURATION - PED – design pressures and risk categories (tables–groups)
Group 2 Fluids

T.S. = Tube Side S.S. = Shell Side

Size	3 – Ø 219,1								
Suffix	**10**	**12**	**15**	**20**	**25**	**30**	**40**	**50**	**60**
Tubes lenght mm	950	1150	1450	1950	2450	2950	3930	4930	5930

Tube	Design pressure	Side	Risk categories	
Ø 18 x 1	**12 bar @ 110 °C (1)**	T.S.	Tab. 4 – 4/3	
	12 bar @ 191.7 °C	S.S.	Tab. 2 – Cat. II°	Mod. G (2)
	12 bar @ 110 °C (1)	T.S.+S.S.	Tab. 4 – 4/3	
	12 bar @ 191.7 °C		Tab. 2 – Cat. II°	Mod. G (2)
Ø 14 x 1	**12 bar @ 110 °C (1)**	T.S.	Tab. 4 – 4/3	
	12 bar @ 191.7 °C	S.S.	Tab. 2 - Cat. II°	Mod. G (2)
	12 bar @ 110 °C (1)	T.S.+S.S.	Tab. 4 – 4/3	
	12 bar @ 191.7 °C		Tab. 2 - Cat. II°	Mod. G (2)
Ø 12 x 1	**12 bar @ 110 °C (1)**	T.S.	Tab. 4 – 4/3	
	12 bar @ 191.7 °C	S.S.	Tab. 2 - Cat. II°	Mod. G (2)
	12 bar @ 110 °C (1)	T.S.+S.S.	Tab. 4 – 4/3	
	12 bar @ 191.7 °C		Tab. 2 - Cat. II°	Mod. G (2)
Ø 10 x 1	**12 bar @ 110 °C (1)**	T.S.	Tab. 4 – 4/3	
	12 bar @ 191.7 °C	S.S.	Tab. 2 - Cat. II°	Mod. G (2)
	12 bar @ 110 °C (1)	T.S.+S.S.	Tab. 4 – 4/3	
	12 bar @ 191.7 °C		Tab. 2 - Cat. II°	Mod. G (2)

(1) Liquids with vapour tension ≤ 0,5 barg @ 110,0 °C

(2) The measures belonging to the G module can fall in the Cat. II by reducing the design pressure. Please contact our Technical Department

CONFIGURATION - PED – design pressures and risk categories (tables–groups)
Group 2 fluids

T.S. = Tube Side S.S. = Shell Side

Size	4 – Ø 273								
Suffix	**10**	**12**	**15**	**20**	**25**	**30**	**40**	**50**	**60**
Tube lenght mm	950	1150	1450	1950	2450	2950	3930	4930	5930

Tube	Design pressures	Side	Risk categories	
Ø 18 x 1	**12 bar @ 110 °C (1)**	T.S.	Tab. 4 – 4/3	
	12 bar @ 191.7 °C	S.S.	Tab. 2 – Cat. II° (3)	Mod. G (2)
	12 bar @ 110 °C (1)	T.S.+S.S.	Tab. 4 – 4/3	
	12 bar @ 191.7 °C		Tab. 2 – Cat. II°	Mod. G (2)
Ø 14 x 1	**12 bar @ 110 °C (1)**	T.S.	Tab. 4 – 4/3	
	12 bar @ 191.7 °C	S.S.	Tab. 2 - Cat. II°	Mod. G (2)
	12 bar @ 110 °C (1)	T.S.+S.S.	Tab. 4 – 4/3	
	12 bar @ 191.7 °C		Tab. 2 - Cat. II°	Mod. G (2)
Ø 12 x 1	**12 bar @ 110 °C (1)**	T.S.	Tab. 4 – 4/3	
	12 bar @ 191.7 °C	S.S.	Tab. 2 - Cat. II°	Mod. G (2)
	12 bar @ 110 °C (1)	T.S.+S.S.	Tab. 4 – 4/3	
	12 bar @ 191.7 °C		Tab. 2 - Cat. II°	Mod. G (2)
Ø 10 x 1	**12 bar @ 110 °C (1)**	T.S.	Tab. 4 – 4/3	
	12 bar @ 191.7 °C	S.S.	Tab. 2 - Cat. II° (3)	Mod. G (2)
	12 bar @ 110 °C (1)	T.S.+S.S.	Tab. 4 – 4/3	
	12 bar @ 191.7 °C		Tab. 2 - Cat. II° (3)	Mod. G (2)

(1) Liquids with vapour tension ≤ 0,5 barg @ 110,0 °C

(2) The measures belonging to the G module can fall in the Cat. II by reducing the design pressure. Please contact our Technical Department

(3) If nozzles are encreased respect to the std connections, check the proper category; the limit of the II cat.must be ≤ 83.34 liters

CONFIGURATION - PED – design pressures and risk categories (tables–groups)
Group 2 Fluids

T.S. = Tube Side S.S. = Shell Side

Size	5 – Ø 323,9								
Suffix	**10**	**12**	**15**	**20**	**25**	**30**	**40**	**50**	**60**
Tube lenght mm	950	1150	1450	1950	2450	2950	3930	4930	5930

Tube	Design pressure	Side	Risk categories	
Ø 18 x 1	**12 bar @ 110 °C (1)**	T.S.	Tab. 4 – 4/3	
	12 bar @ 191.7 °C	S.S.	Tab. 2 – Cat. II°	Mod. G (2)
	12 bar @ 110,0 °C (1)	T.S.+S.S.	Tab. 4 – 4/3	
	12 bar @ 191.7 °C		Tab. 2 – Cat. II°	Mod. G (2)

Size	6 – Ø 355,6								
Suffix	**10**	**12**	**15**	**20**	**25**	**30**	**40**	**50**	**60**
Tube lenght mm	950	1150	1450	1950	2450	2950	3930	4930	5930

Tube	Design pressure	Side	Risk categories	
Ø 18 x 1	**12 bar @ 110 °C (1)**	T.S.	Tab. 4 – 4/3	
	12 bar @ 191.7 °C	S.S.	Tab. 2 – Cat. II°	Mod. G (2)
	12 bar @ 110,0 °C (1)	T.S.+S.S.	Tab. 4 – 4/3	
	12 bar @ 191.7 °C		Tab. 2 – Cat. II°	Mod. G (2)

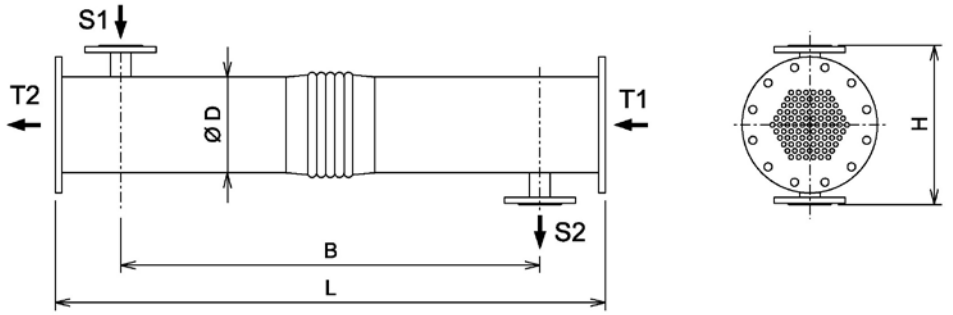
Size	7 – Ø 406,4								
Suffix	**10**	**12**	**15**	**20**	**25**	**30**	**40**	**50**	**60**
Tube lenght mm	950	1150	1450	1950	2450	2950	3930	4930	5930

Tube	Design pressure	Side	Risk categories	
Ø 18 x 1	**12 bar @ 110 °C (1)**	T.S.	Tab. 4 - Art. 4 Par.3	
	12 bar @ 191.7 °C	S.S.	Tab. 2 Cat. II°	Mod. G (2)
	12 bar @ 110,0 °C (1)	T.S.+S.S.	Tab. 4 - Art. 4 Par.3	
	12 bar @ 191.7 °C		Tab. 2 Cat. II°	Mod. G (2)

(1) Liquids with vapour tension ≤ 0,5 barg @ 110,0 °C

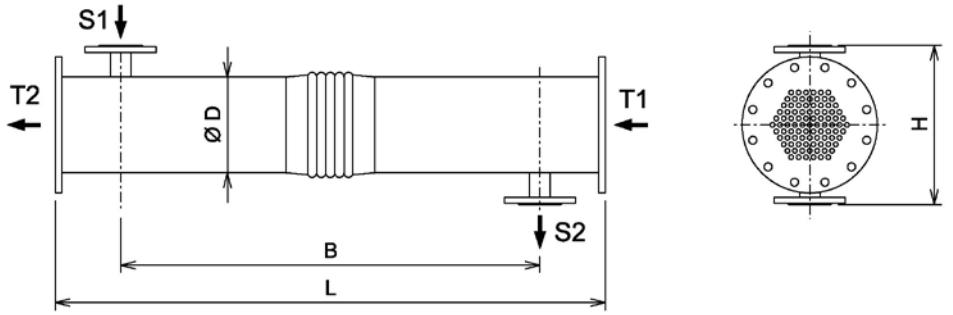
(2) The measures belonging to the G module can fall in the Cat. II by reducing the design pressure. Please contact our Technical Department

Models, Dimensions in mm, Connections and Weights in Kg – PN16 FLANGED CONNECTIONS



Size	Model	Ø D	L	B	H	Head Connect. EN 1092-1 PN16 T1 – T2	Shell connectons EN 1092-1 PN16		weight Kg nozzle 1st line Tubi			
							S1	S2	Ø10	Ø12	Ø14	Ø18
C	10	60.3	950	750	280	DN 50	DN 32	DN 20	13,5	13,2	13,5	13,0
	12		1150	950					14,4	14,2	14,5	13,9
	15		1450	1250					15,9	15,6	16,1	15,3
	20		1950	1750					18,5	18,0	18,7	17,7
	25		2450	2250					21,1	20,4	21,2	20,0
	30		2950	2730					23,6	22,8	23,8	22,3
	40		3930	3730					28,8	27,7	29,0	26,9
	50		4930	4730					33,9	32,5	34,2	31,5
	60		5930	5730					39,1	37,3	39,3	36,1
B	10	76.3	950	730	300	DN 65	DN 40	DN 25	18,4	17,2	17,3	16,8
	12		1150	930					20,2	18,6	18,8	18,1
	15		1450	1230					22,7	20,7	20,9	20,1
	20		1950	1730					27,0	24,2	24,6	23,4
	25		2450	2230					31,3	27,8	28,2	26,8
	30		2950	2730					35,6	31,3	31,8	30,1
	40		3930	3710					44,2	38,4	39,1	36,8
	50		4930	4710					52,8	45,5	46,3	43,5
	60		5930	5710					61,4	52,6	53,6	50,2
A	10	88.9	950	730	310	DN 80	DN 40	DN 25	22,5	21,2	20,6	20,4
	12		1150	930					24,7	23,1	22,4	22,1
	15		1450	1230					28,0	25,9	25,0	24,7
	20		1950	1730			DN 40	DN 40	33,5	30,7	29,5	29,0
	25		2450	2230					39,0	35,5	33,9	33,3
	30		2950	2730					44,5	40,2	38,3	37,7
	40		3930	3710			DN 50	DN 50	55,6	49,7	47,2	46,3
	50		4930	4710					66,6	59,3	56,1	54,9
	60		5930	5710					77,6	68,8	64,9	63,5
0	10	114.3	950	700	340	DN 100	DN 50	DN 25	29,9	29,4	29,3	27,7
	12		1150	900					33,2	32,5	32,4	30,5
	15		1450	1200					38,1	37,2	37,1	34,6
	20		1950	1700			DN 50	DN 50	46,2	45,1	44,9	41,4
	25		2450	2200					54,4	52,9	52,7	48,3
	30		2950	2700					62,5	60,7	60,5	55,2
	40		3930	3700			DN 65	DN 65	78,8	76,4	76,1	68,9
	50		4930	4700					95,1	92,1	91,7	82,6
	60		5930	5700					111,4	107,7	107,3	96,3
1	10	139.7	950	700	340	DN 125	DN 50	DN 40	41,5	42,0	39,4	36,6
	12		1150	900					46,1	46,7	43,5	40,0
	15		1450	1200					52,9	53,8	49,6	45,2
	20		1950	1700			DN 65	DN 65	64,4	65,5	59,8	53,7
	25		2450	2200					75,9	77,2	70,0	62,3
	30		2950	2700					87,3	88,9	80,2	70,9
	40		3930	3700			DN 80	DN 80	110,2	112,3	100,6	88,0
	50		4930	4700					133,1	135,8	121,0	105,1
	60		5930	5700					156,0	159,3	141,4	122,2
2	10	168.3	950	690	380	DN 150	DN 80	DN 40	58,0	57,0	53,2	49,1
	12		1150	890					64,9	63,6	59,0	53,9
	15		1450	1190					75,3	73,6	67,6	61,1
	20		1950	1690			DN 80	DN 80	92,5	90,3	82,1	73,2
	25		2450	2190					109,8	106,9	96,1	85,2
	30		2950	2690					127,1	123,6	111,0	97,3
	40		3930	3690			DN 100	DN 100	161,6	156,8	139,9	121,3
	50		4930	4690					196,2	190,1	168,8	145,4
	60		5930	5690					230,8	223,4	197,7	169,5

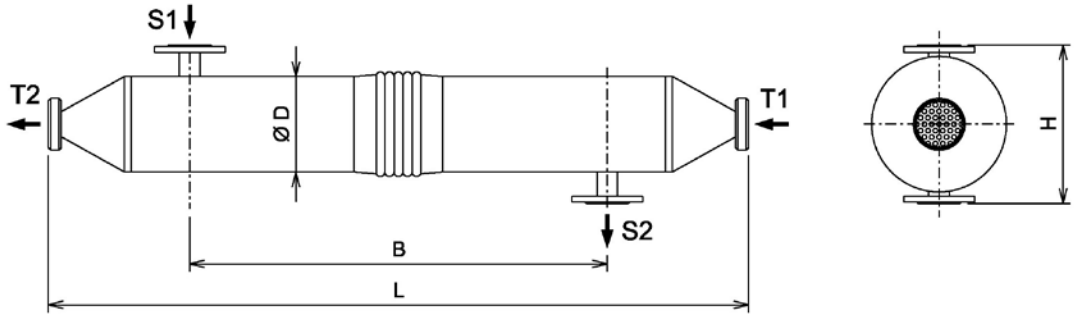
Modeld, Dimensions in mm, Connections and Weights in Kg – PN16 FLANGED CONNECTIONS



Size	Model	Ø D	L	B	H	Head connect. EN 1092-1 PN16 T1 – T2	Shell connections EN 1092-1 PN16		weight Kg mozzle 1st line Tubes			
							S1	S2	Ø10	Ø12	Ø14	Ø18
3	10	219.1	950	690	460	DN 200	DN 80	DN 50	97,4	93,6	89,0	78,0
	12		1150	890					110,4	105,7	100,0	86,4
	15		1450	1190					130,0	123,8	116,5	99,1
	20		1950	1690			DN 80	DN 80	162,6	154,0	144,1	120,2
	25		2450	2190					195,1	184,3	171,7	141,3
	30		2950	2690			DN 100	DN 100	227,7	214,5	199,2	162,4
	40		3930	3690					292,8	274,9	254,4	204,6
	50		4930	4690			DN 125	DN 125	357,9	335,4	309,5	246,9
	60		5930	5690					423,1	395,9	364,6	289,1
4	10	273.4	950	670	520	DN 250	DN 100	DN 65	144,6	139,1	129,7	111,7
	12		1150	870			DN 100	DN 100	164,2	157,4	145,8	123,5
	15		1450	1170					193,6	184,8	169,9	141,2
	20		1950	1670			DN 125	DN 125	242,6	230,5	210,1	170,7
	25		2450	2170					291,7	276,2	250,3	200,2
	30		2950	2670			DN 150	DN 150	340,7	321,9	290,5	229,7
	40		3930	3670					438,8	413,2	370,9	288,8
	50		4930	4670			DN 200	DN 200	536,8	504,6	451,3	347,8
	60		5930	5670					634,9	595,9	531,7	406,8
5	10	323.9	950	590	580	DN 300	DN 150	DN 100	N.A.			167,9
	12		1150	790								186,1
	15		1450	1090								213,5
	20		1950	1590			DN 150	DN 150				259,1
	25		2450	2090								304,7
	30		2950	2590								350,3
	40		3930	3590			DN 200	DN 200				441,6
	50		4930	4590								532,8
	60		5930	5590								624,1
6	10	355.6	950	590	580	DN 350	DN 150	DN 125	N.A.			215,7
	12		1150	790								238,6
	15		1450	1090								273,1
	20		1950	1590			DN 150	DN 150				330,5
	25		2450	2090								388,0
	30		2950	2590								445,3
	40		3930	3590			DN 200	DN 200				560,1
	50		4930	4590								674,9
	60		5930	5590								789,7
7	10	406.4	950	590	640	DN 400	DN 150	DN 150	N.A.			276,7
	12		1150	790								306,0
	15		1450	1090								349,9
	20		1950	1590			DN 200	DN 200				423,0
	25		2450	2090								496,1
	30		2950	2590								569,3
	40		3930	3590			DN 250	DN 250				715,6
	50		4930	4590								861,8
	60		5930	5590								1008,0

N.A. = Not Applicable

Models, Dimensions in mm, Connections and Weight in Kg – DIN 11851 Food connections



Size	Model	Ø D	L	B	H	Head connections DIN 11851 Female T1 – T2	Shell connections EN 1092-1 PN16 (1)		Weight Kg Tubes			
							S1	S2	Ø10	Ø12	Ø14	Ø18
C	10	60.3	1050	750	280	DN 40	DN 32	DN 20	12,9	12,6	12,9	12,4
	12		1250	950					13,8	13,6	13,9	13,3
	15		1340	1250					15,3	15,0	15,5	14,7
	20		2050	1750					17,9	17,4	18,1	17,1
	25		2550	2250					20,5	19,8	20,6	19,4
	30		3050	2730					23,0	22,2	23,2	21,7
	40		4030	3730					28,2	27,1	28,4	26,3
	50		5030	4730					33,3	31,9	33,6	30,9
	60		6030	5730					38,5	36,7	38,7	35,5
B	10	76.3	1050	730	300	DN 50	DN 40	DN 25	16,7	15,5	15,6	15,1
	12		1250	930					18,5	16,9	17,1	16,4
	15		1340	1230					21,0	19,0	19,2	18,4
	20		2050	1730					25,3	22,5	22,9	21,7
	25		2550	2230					29,6	26,1	26,5	25,1
	30		3050	2730					33,9	29,6	30,1	28,4
	40		4030	3710					42,5	36,7	37,4	35,1
	50		5030	4710					51,1	43,8	44,6	41,8
	60		6030	5710					59,7	50,9	51,9	48,5
A	10	88.9	1050	730	310	DN 65	DN 40	DN 25	18,8	17,5	16,9	16,7
	12		1250	930					21,0	19,4	18,7	18,4
	15		1340	1230					24,3	22,2	21,3	21,0
	20		2050	1730					29,8	27,0	25,8	25,3
	25		2550	2230					35,3	31,8	30,2	29,6
	30		3050	2730					40,8	36,5	34,6	34,0
	40		4030	3710					51,9	46,0	43,5	42,6
	50		5030	4710					62,9	55,6	52,4	51,2
	60		6030	5710					73,9	65,1	61,2	59,8
0	10	114.3	1070	700	340	DN 65	DN 50	DN 25	25,7	25,2	25,1	23,5
	12		1270	900					29,0	28,3	28,2	26,3
	15		1570	1200					33,9	33,0	32,9	30,4
	20		2070	1700					42,0	40,9	40,7	37,2
	25		2570	2200					50,2	48,7	48,5	44,1
	30		3070	2700					58,3	56,5	56,3	51,0
	40		4050	3700					74,6	72,2	71,9	64,7
	50		5050	4700					90,9	87,9	87,5	78,4
	60		6050	5700					107,2	103,5	103,1	92,1
1	10	139.7	1070	700	340	DN 80	DN 50	DN 40	35,7	36,2	33,6	30,8
	12		1270	900					40,3	40,9	37,7	34,2
	15		1570	1200					47,1	48,0	43,8	39,4
	20		2070	1700					58,6	59,7	54,0	47,9
	25		2570	2200					70,1	71,4	64,2	56,5
	30		3070	2700					81,5	83,1	74,4	65,1
	40		4050	3700					104,4	106,5	94,8	-2,1
	50		5050	4700					127,3	130,0	115,2	99,3
	60		6050	5700					150,2	153,5	135,6	116,4
2	10	168.3	1070	690	380	DN 100	DN 80	DN 40	50,5	49,5	45,7	41,6
	12		1270	890					57,4	56,1	51,5	46,4
	15		1570	1190					67,8	66,1	60,1	53,6
	20		2070	1690					85,0	82,8	74,6	65,7
	25		2570	2190					102,3	99,4	88,6	77,7
	30		3070	2690					119,6	116,1	103,5	89,8
	40		4050	3690					154,1	149,3	132,4	113,8
	50		5050	4690					188,7	182,6	161,3	137,9
	60		6050	5690					223,3	215,9	190,2	162,0

(1) Other connections on request

SKID solutions – ASSEMBLY with PED 2014/68/UE conformity

The preassembled “skid” units – “assembly” are complete units, integrated with control panel.
Conformity PED 2014/68 / EU with Declaration of Conformity Assembly CAT. IV CE marked with Notified Body number, exempt from commissioning according to art.5 of D.M. service December 1, 2044 No. 329.
They are dedicated to produce hot water and superheated water with primary heat transfer fluid in the shell side: Superheated Water - Steam.

Main characteristics:

• ***BASEMENT***	*Carbon steel U profile RAL 6011 painted – UNP 240 x 80 RAL 6011 painted – Palletized and with eyebolts*
TECHNOLOGICAL STEAM PIPELINES	*Carbon steel ASTM A106 gr. B API5L sch. 40 – painted with a coat of rust inhibitor and a coat for high temperature – Carbon steel flanges EN 1092-1 PN16 o PN40 – Carbon steel fittings – Armed graphite gaskets*
• ***ELECTRICAL CONTROL PANEL***	*Electrical control panel RAL 7032 painted or st. steel AISI 304, with Siemens PLC or electromechanical*
• ***CONNECTIONS***	*Electric or pneumatic to pneumatic valves and to the other equipments*
• ***INSULATION***	*Unfired steam generator – Pipelines except the valves, with rock wool th.50 mm density 100 Kg/dm3 with covering of aluminum sheet 8/10, openings with stainless steel screws*
• ***COMPONENTS***	*High quality from CONFLOW SpA products range*