

FLowsic®

2025



ITALPROTEC
—INDUSTRIES—

BUILDING THE FUTURE
TOGETHER

The new Silicon Carbide Shell and Tube Heat Exchangers Flowsic® have been designed taking into consideration every detail according to hi-tech standards. Silicon carbide's thermal conductivity is similar to graphite's and much greater than other corrosion-resistant materials as glass, compound special alloys, noble metals.

Wide range of materials

Depending on the process, the circulating fluids and the working conditions, the shell can be made in glass-lined steel, 304L or 316L stainless steel, zinc plated CS PFA lined. Process fluids can circulate either inside or outside the Silicon Carbide tubes.



FLOWSic[®]

Flowsic[®] - a new concept of sealing with SS/PFA tubesheet

The FLOWSIC heat exchanger is fabricated in such a way as to ensure a seal between the silicon carbide tubes and the perfluoro-elastomer O-rings (FFKM) separating the process side from the cooling/heating side and is equipped with a leak detection chamber interposed between the two tube plates



Shell-side primary plate made of stainless steel with O-ring seats and leak detection chamber.

Process-side compression plate made of carbon steel lined by transfermolding process with virgin PFA.

Perfluoro-elastomer PFX O-ring with Min/max

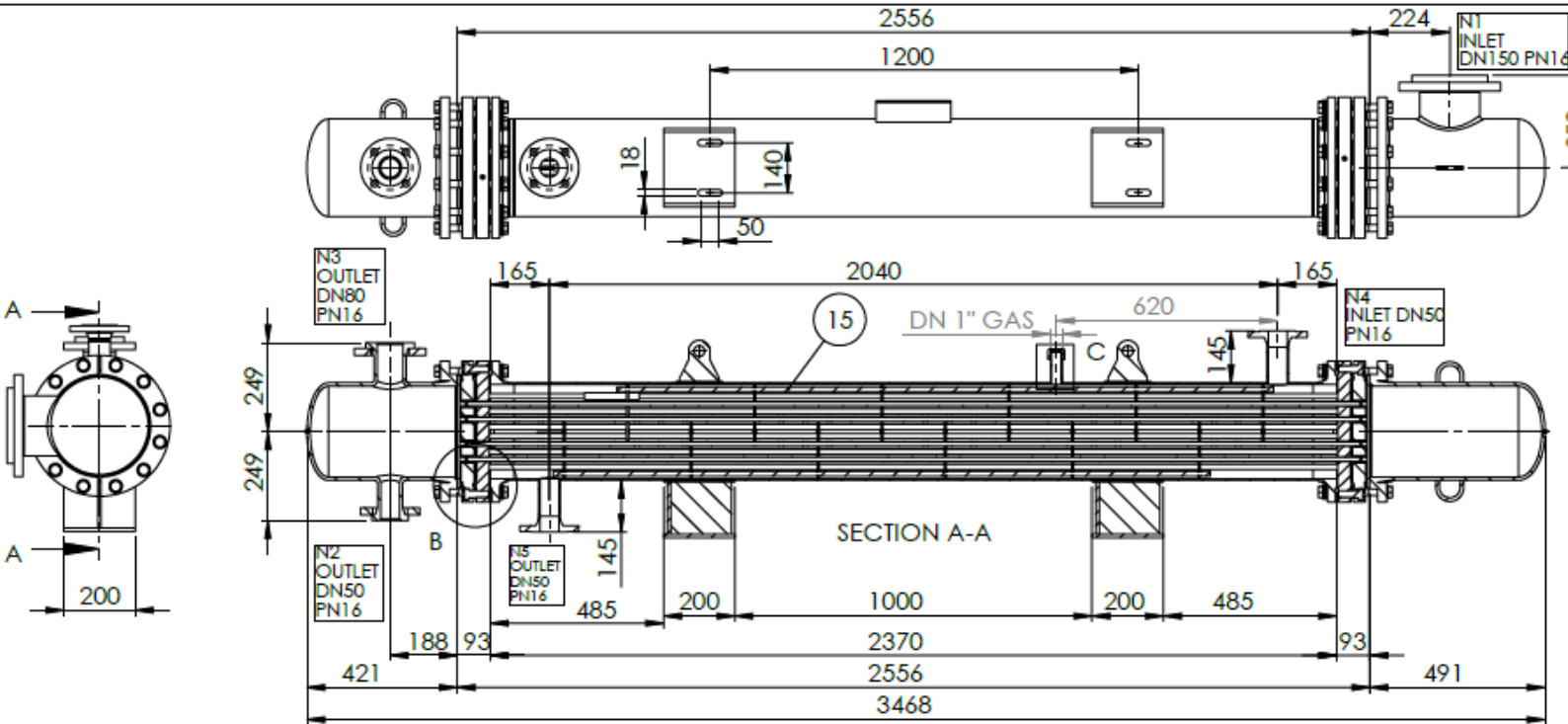
Application Temperature $-30/+250^{\circ}\text{C}$

Shell-side primary plate is fully machined to ensure that the O-ring seats meet the required tolerances.

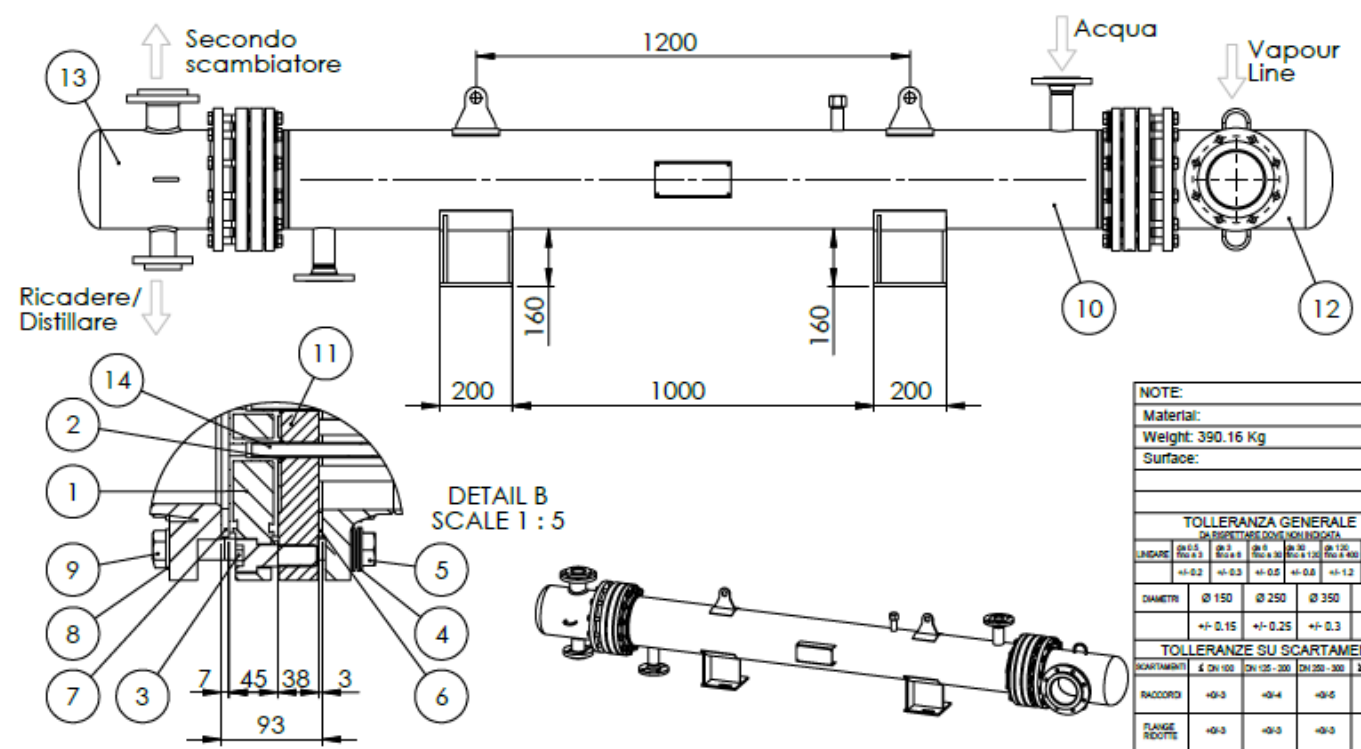
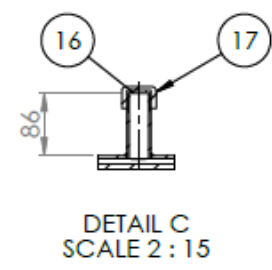
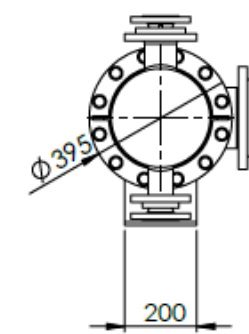
After moulding, the plate is totally machined to ensure the required tolerances.

The calculation code for the construction of the exchanger is in accordance with EN13445, after assembly of the parts the exchanger is tested at 1.5 times the design pressure for both the shell and tube side, on request it is possible to test the tube side with air at a maximum pressure of 2 bar.





ITALPROTEC INDUSTRIES		CE 1370	
TYPE	ORIENTAL FLOWSC DSS LT	TUBES SIDE	SHELL SIDE
CUSTOMER	ACQUA	MAX	ACQUA
END USER		CAPACITY	89 l
ITEM	PRFWCC5200036	WORKING TEMPERATURE	-25/+200°C
SERIAL N°	ATTANNN00055	MAXIMUM PRESSURE	-1/+1 bar
PROJECT N°		APPROVAL FOR	10 bar
PO N°	YEAR	PERMANENT FOR	2 bar
JOB N°	YYYY	INSPECTION DATE	DD/MM/YYYY
SURFACE	8,4 MG		
FED MODULE	N		
CODE	DN 13445	EMPTY WEIGHT	390 Kg



POS	DESCRIZIONE	Q.TY	MATERIAL	Peso	CODICE
17	Tappo esagonale AISI 304 1"G femmina	1	AISI 304L	0.18	PRRA/C10200063
16	Lastra sfogliata PTFE 4mm	1	PTFE ASTM D 4895	0.01	PRLAM70100004
15	Assemble supporto tubi DS in PTFE DN 250	1	PTFE	13.53	PRSDCTD1000057
14	Tubo SIC WILK 2e 1.4x1.5 x 2500mm	80	Sic	0.15	PRTUBV0400024
13	Calotta DIN PN10 DN250x80x50 LTS/smalto	1	CS	54	PRSDCC5600013
12	Calotta DIN PN10 DN250x150 LTS/smalto	1	CS	54	PRSDCC5600014
11	Plastra tubiera DN 250 304L	2	AISI 304L	29.57	PRSDCC0200142
10	Mantello DS_O in 304L DN 250x50x50	1	304L	116.65	PRSDCC02000209
9	Vite TEFF ISO 4014 A2 M20x100	24	AISI 304	0.33	PRVT0100164
8	Rondella piana A2-70 ISO 7089 M20	24	AISI 304	0.02	PRVT01000005
7	Guarniz. busta circ. (U) DIN DN 250	2	PTFE ASTM D 4895	0.36	COORNT0100053
6	Guarnizione FLOH-CHEM 1050 Ø 314/265x3mm	2	PTFE ASTM D 4895	0.15	PRGRNT0100028
5	Vite TEFF ISO 4017 A2 M20x75	24	AISI 304	0.26	PRVT0100160
4	Molle a forza DIN 2093 AISI 304 M20	96	AISI 304	0.01	PRVT0100024
3	Vite TCCE ISO21269 A2 M20x55	24	AISI 304	0.24	PRVT0100193
2	O-Ring PFK 8040 nero 753H Ø 13,94 x 2,42	160	FFKM	0.00	PRORIC0400002
1	Plastra princ. DSS DN 250 LTS/RAL/PFA HD	2	LTS/PFA	27.64	PRSDCC52000031

NOTE:

Material: Weight: 390.16 Kg Surface:

TOLLERANZA GENERALE
DA RISPETTARE DOVE NON INDICATA

UNIDITÀ	Ø 150	Ø 250	Ø 350	Ø 500
±0.5	±0.3	±0.5	±0.8	±1.2
±0.2	±0.1	±0.3	±0.5	±0.8

DIAMETRI Ø 150 Ø 250 Ø 350 Ø 500

±0.15 ±0.25 ±0.3 ±0.5

TOLLERANZE SU SCARTAMENTI

SCARTAMENTI	± 100	DN 125 - 200	DN 250 - 300	≥ DN 350
±0.5	±0.3	±0.5	±0.8	±1.2

RACCORDI ±0.3 ±0.5 ±0.8 ±1.2

FLANGE RECTITE ±0.3 ±0.5 ±0.8 ±1.2

DESCRIZIONE:

Flowsc DSS_LT orizzontale DN250 LTS/PFA

8,4 mq, 80 tubi SIC-2500, mantello AISI 304 DN 250x50x50

calotte conto lavoro cliente, TS -25°C/+200°C, PS -1/+6bar

CODICE:

PRFWCC5200036-C

SCALA: 1:15

DISSEGNA: Maurizio Bassani

DATA: 28/04/2022

APPROVATO: Rosi

REVISIONE: B

CLIENTE:

ITALPROTEC INDUSTRIES

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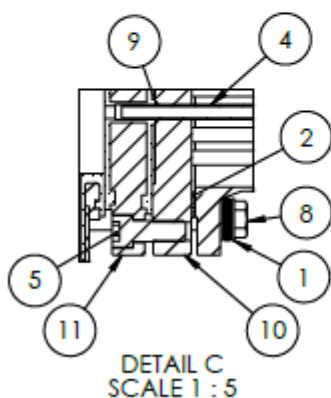
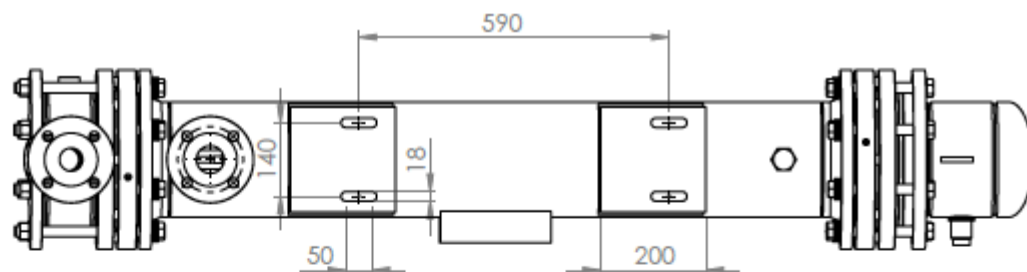
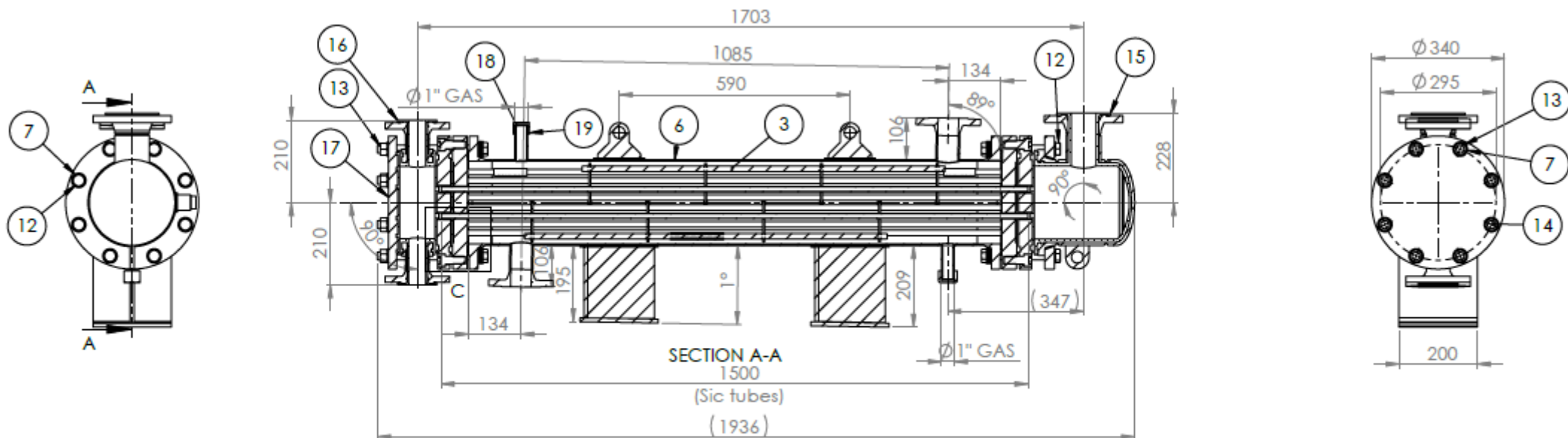
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N° ORDINE

Order N°

COMMESSA

Job



19	Hex. Plug AISI 304 1" GAS Female	2	AISI 304L	0.18	PRFA00200063
18	PTFE Gasket 1/8", 4mm.	2	PTFE ASTM D 4095	0.01	PRFAM01000004
17	Blind Flange DN DN 200 LITS/PFA HD	1	LITS/PFA HD	14.44	PRPTFC52000029
16	Instrument Tee DN DN 200x50x50 LITS/PFA HD	1	LITS/PFA HD	22.40	PRPTFC52000097
15	Head DN 200x50 LITS/PFA HD	1	LITS/PFA HD	33.26	PRSDC52000047
14	stud A2 M20 L= 185 mm	8	AISI 304	0.44	PRVTE0100109
13	Hexagonal Nut EN24032 A2 M20	8	AISI 304	0.08	PRVTE0100130
12	Hex Screw ISO 4014 A2 M20x90	8	AISI 304	0.30	PRVTE0100162
11	Compress. Plate, DSS DN 200 LITS/PFA HD	2	LITS/PFA HD	20.13	PRSDC52000043
10	Math plate DN 200 304L	2	AISI 304L	23.12	PRSDC52000079
9	O-Ring PTFE 75Sh Ø 13,94 x 2,62	84	PTFE	0.00	PRORIG04000026
8	ISO 4017 A2 M20x75 screw	16	AISI 304	0.26	PRVTE0100140
7	A2-70 ISO 7089 M20 flat washer	16	AISI 304	0.02	PRVTE01000025
6	Shell DS_O 304L DN200x50x50	1	304L	78.09	PRSDC52000026
5	Cap Screw ISO21269 A2 M20x50	16	AISI 304	0.22	PRVTE0100203
4	SIC tube Øe 14x1,5 x 1500mm	42	Sic	0.09	PRFUSV04000023
3	Sic 1500mm support assembly	1	PTFE	6.75	PRSDC01000096
2	Gasket FLON-CHEM 1050 Ø 268/220x3mm	2	BLUFLEX	0.12	PRGRHD1000022
1	DN 200 AISI 304 M20 spring washer	64	AISI 304	0.01	PRVTE01000024
POS	DESCRIPTION	Q.TY	MATERIAL	Peso	CODICE

NOTE:

Material:

Weight: 263.87 Kg

Surface:

Units: Metric (mm.)

GENERAL TOLERANCES (mm.)

(unless stated)

ISO 2768

ISO 2768

ISO 2768

ISO 2768

ISO 2768

ISO 2768

ISO 2768

ISO 2768

ISO 2768

ISO 2768

DESCRIPTION:

FLOWMETER DSS_LT horizontal DN200 LITS/PFA

2,60 mq, 42 SIC tubes 1500mm, 304L shell DN 200x50x50, IN=DN200x50

OUT DN 200x50x50; PS: -1/6 bar, TS: -25°C/+200°C

ITEM:

PRFWCC5200050-C

SCALE:

1:10

DATE:

27/07/2023

REVISION:

A

CUSTOMER:

DRAWN BY:

Maurizio Bassani

APPROVED:

Rossi

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DATE: 27/07/2023

DRAWN BY: Maurizio Bassani

APPROVED: Rossi

ORDER N°:

THANK YOU



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