

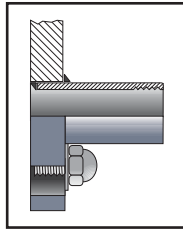
The logo features the word "CIPRIANI" in a large, bold, white sans-serif font, with "SCAMBIATORI" in a smaller, white sans-serif font directly below it. The text is centered within a dark blue square. To the right of the square, there is a stylized graphic element consisting of a series of vertical lines of varying heights, resembling a heat exchanger or a comb, with a dark blue triangle pointing to the right, partially overlapping the lines.

CIPRIANI
SCAMBIATORI

plate range

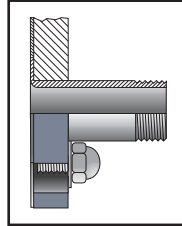
	041	080	100	125	125 plus	250	300	450	650 plus
Exchange area, m ²	0.041	0.080	0.100	0.125	0.125	0.250	0.300	0.450	0.650
Width, mm	140	145	189	241	241	303	421	420	631
Height, mm	466	740	642	723	723	987	875	1320	1335
Connections diameter	1"1/4 DN 32	1"1/4 DN 32	1"1/2 DN 40	2"1/2 DN 65	2"1/2 DN 65	3" DN 80	4" DN 100	4" DN 100	8" DN 200
Channel capacity, l	0.09	0.19	0.20	0.28	0.27	0.75	0.97	1.3	1.8
Steel thickness, mm	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
Plate thickness, mm	2.9	2.9	3.1	3.45	3.35	3.5	3	3	3.4
Plate weight (with gaskets), kg	0.33	0.54	0.59	0.84	0.84	1.5	1.61	2.55	4.45
Test pressure, bar	21	21	21	25	25	21	12	12	21
Max. working pressure, bar	16	16	16	16	20	16	8	8	16
Thermal length	A	A	A+B	A+B	A+B	A	A+B	A+B	A+B
Max. water flow rate, m ³ /h	14	14	25	65	65	100	200	200	400

Connections design and frames size



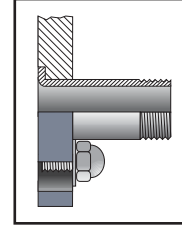
Carbon steel, female threaded connections; they are directly welded onto the head frame.

Models: 250
Optional:
041 - 080 - 100 - 125



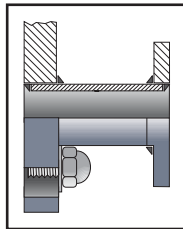
Galvanized and stainless steel, male threaded connections; provided with a spacing aluminium plate to even up the connections' flanges with the inner face of the head frame.

Models: 041 - 080 - 100 - 125



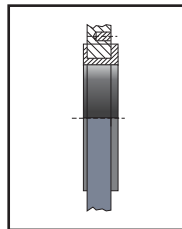
Molybdenum and stainless steel, male threaded connections; provided with a cavity drilled on the inner face of the head frame to even up the connections' flanges with it.

Model: 250
For molybdenum only: 041 - 080 - 100 - 125



Carbon steel connections with on-pipe-welded flanges PN16; when flanges are too close, different length of pipes are foreseen.

Models:
041 - 080 - 100 - 125 - 250

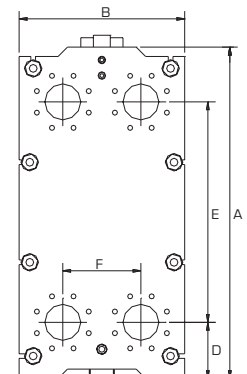
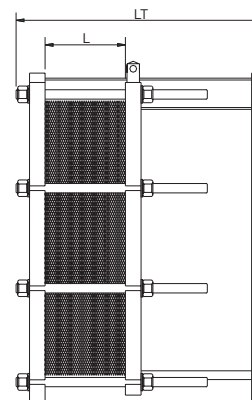
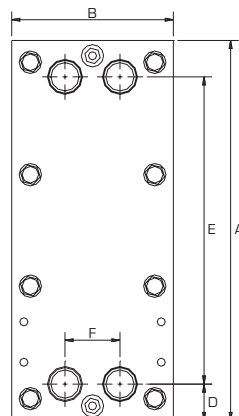
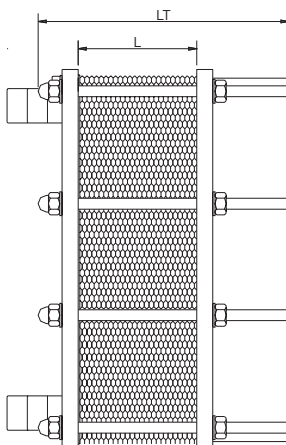


Connections to be flanged PN 16; with rubber liner of the same material of the gaskets on the plates.

Models: 300 - 450 - 650

FRAMES	PI 041	PI 080	PG 100	PG 125	PG 250	PG 300	PG 450	PG 650
A	470	760	720	820	1080	1060	1506	1600
B	200	200	250	310	400	530	530	810
E	380	665	555	603	843	705	1150	1055
F	68	68	100	123	162	250	250	391
D	45	48	103	128	138	180	178	268
LT	165, 220, 320	165, 220, 320	510, 715	510, 920	716, 1026, a.m.	818, 1123, a.m.	818, 1123, a.m.	1,170, 1680, a.m.
L	2.9 x np + 2	2.9 x np + 2	3.1 x np + 2	3.45 x np + 2 3.35 x np + 2 for PLUS	3.5 x np	3 x np	3 x np	3.4 x np
Connections diameter	1"1/4 DN 32	1"1/4 DN 32	1"1/2 DN 40	2"1/2 DN 65	3" DN 80	4" DN 100	4" DN 100	8" DN 200

Np = number of plates
All dimensions are in mm
a.m. = cut to measure



Materials depending on usage

This chart shows the compatibility of some fluids with the materials used to manufacture our PHEs

	plate AISI 304	plate AISI 316 L	plate 254 smn	plate titanium	gasket nitrile	gasket EPDM	gasket EPDM PRX	gasket Viton	galvanized connections	AISI 304 connections	mopler connections	welded connections	flanged	rubber liner, to be flanged
Water	■	■			■	■	■	■	■	■	■	■	■	■
Water + glycol	■	■			■	■	■	■	■	■	■	■	■	■
Demineralized water		■			■	■	■	■	■	■	■	■	■	■
Spa water			■	■		■	■			■				■
Sea water			■	■	■	■	■			■				■
Swimmingpool water		■	■	■		■	■			■	■			■
Mineral water		■	■		■	■	■			■				■
Steam < 4 bar ate		■				■				■		■	■	■
Steam < 9 bar ate		■					■			■		■	■	■
Hydraulic oil (mineral)		■		■			■	■	■			■	■	■
Diathermic oil		■		■			■	■	■			■	■	■
Tempering oil		■		■			■	■	■			■	■	■
Mineral oil		■		■			■	■	■			■	■	■
Synthetic oil		■		■			■	■	■			■	■	■
Olive oil		■		■			■	■	■			■	■	■
Corn oil		■		■			■	■	■			■	■	■
Gasoil		■		■			■	■	■			■	■	■
Kerosene		■		■			■	■	■			■	■	■
Oil		■		■			■	■	■			■	■	■
Gasoline		■		■			■	■	■			■	■	■
Naphtha		■		■			■	■	■			■	■	■
Sulphuric acid 20% (in water), 70 °C			■	■		■	■	■		■				■
Hydrochloric acid 10% (in water), 30 °C			■	■		■	■	■		■				■
Acetic acid, 70 °C		■	■	■		■	■	■		■				■
Chromic acid 40%, 50 °C				■			■	■		■				■
Acetone		■			■	■			■					■
Ethylc alcohol		■			■	■	■		■					■
Ethanol		■			■	■	■		■					■
Methanol		■			■	■	■		■					■
Propylene		■					■		■					■
Ethylene		■		■			■		■					■
Glycol		■		■	■	■	■		■					■
Dietilenglycol		■		■	■	■	■		■					■
Ethylenglycol		■		■	■	■	■		■					■
Milk		■		■	■	■	■		■					■
Wine		■		■	■	■	■		■					■
Fruit juice		■		■	■	■	■		■					■
Beer		■		■	■	■	■		■					■
Whisky		■		■	■	■	■		■					■
Wine vinegar		■		■	■	■	■		■					■
Spirit		■		■	■	■	■		■					■

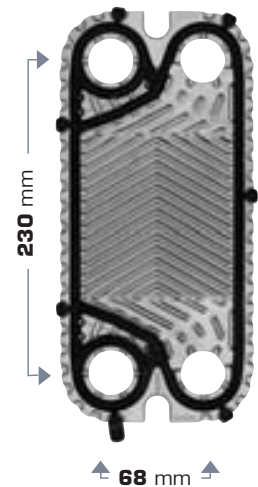
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Technical data

Exchange area, m ²	0,021
Width, mm	145
Height, mm	305
Connections diameter	DN 32 1"1/4
Channel capacity, l.	0,06
Steel thickness, mm	0,6
Plate thickness, mm	3,0
Plate weight (with gasket), Kg	0,20
Test pressure, bar	16 - 26 - 32 - 40
Max. working pressure, bar	10 - 16 - 20 - 25
Thermal length	A
Max. water flowrate, m ³ /h	14
Tightening measure, mm	3,0 x np + 2

np = number of plates



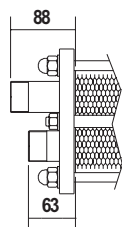
Available gaskets

NBR	●
EPDM	●
EPDM prx	●
Viton	●

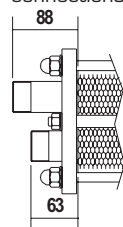
Available steel

AISI 316L	●
254 SMO	●
Titanium	●

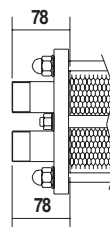
Galvanized threaded connections



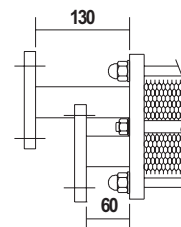
Stainless steel threaded connections

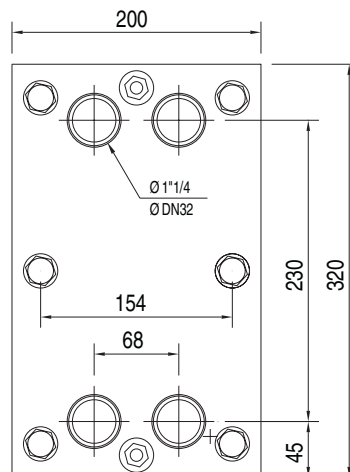
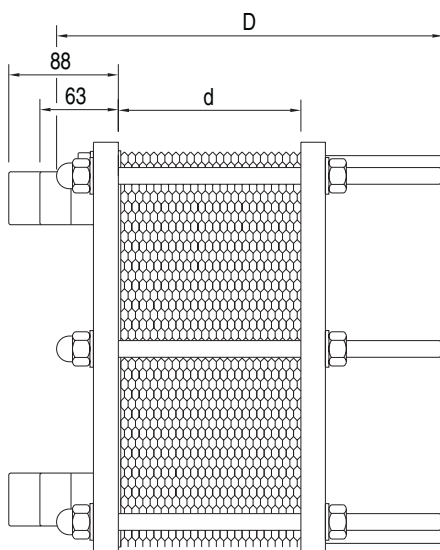
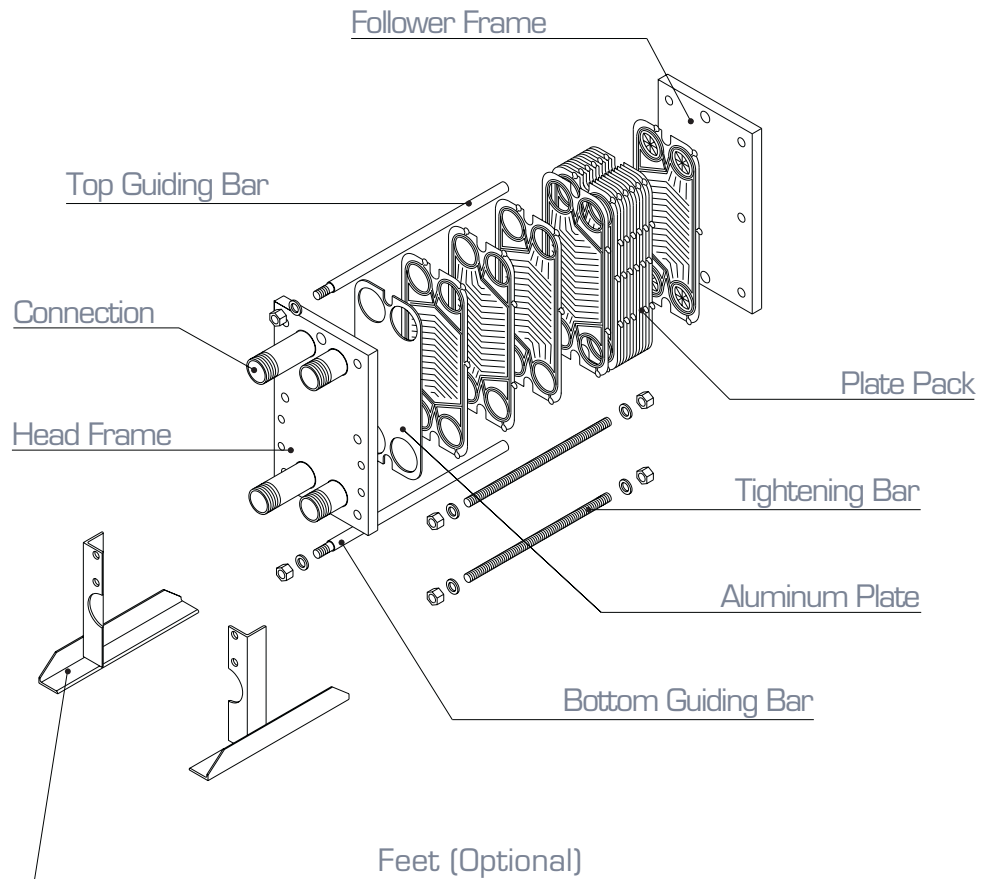


Moplen threaded connections



Flanged connections



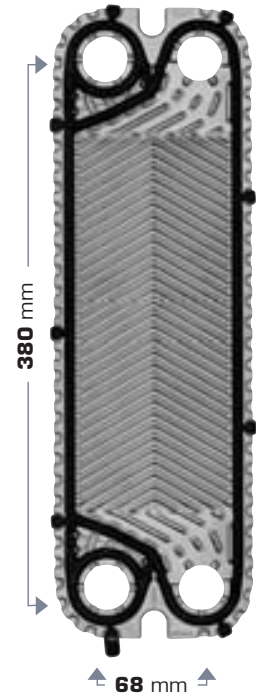


N.P.	d	D
5	17	215
7	23	215
9	29	215
11	35	215
13	41	215
15	47	215
17	53	215
19	59	215
21	65	215
23	71	215
25	77	215
27	83	215
29	89	215
31	95	315
33	101	315
35	107	315
37	113	315
39	119	315
41	125	315
43	131	315
45	137	315
47	143	315
49	149	315

Technical data

Exchange area, m ²	0,041
Width, mm	145
Height, mm	457
Connections diameter	DN 32 1"1/4
Channel capacity, l.	0,10
Steel thickness, mm	0,6
Plate thickness, mm	3,0
Plate weight (with gasket), Kg	0,30
Test pressure, bar	16 - 26 - 32 - 40
Max. working pressure, bar	10 - 16 - 20 - 25
Thermal length	A
Max. water flowrate, m ³ /h	14
Tightening measure, mm	3,0 x np + 2

np = number of plates



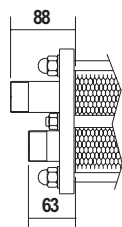
Available gaskets

NBR	●
EPDM	●
EPDM prx	●
Viton	●

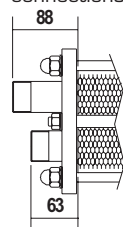
Available steel

AISI 316L	●
254 SMO	●
Titanium	●

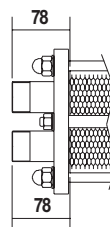
Galvanized threaded connections



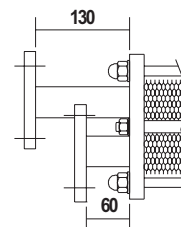
Stainless steel threaded connections

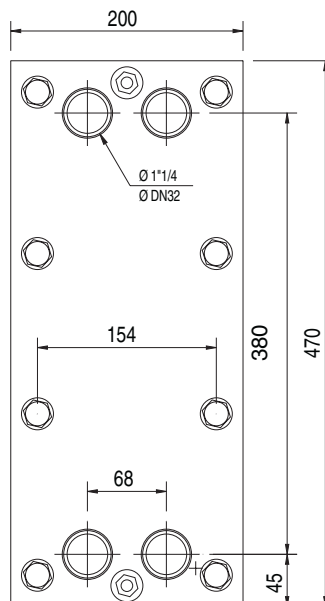
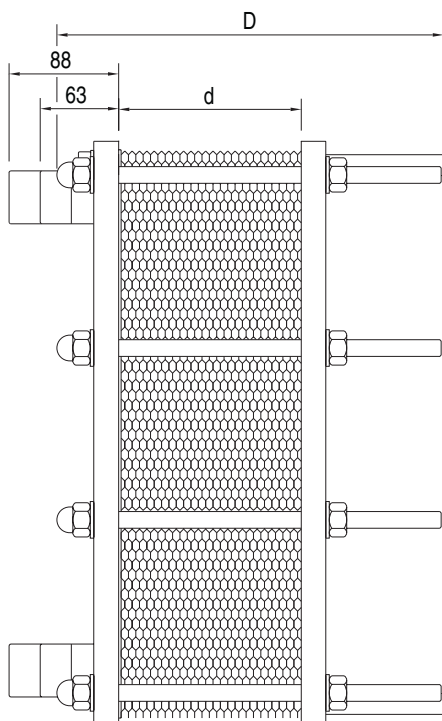
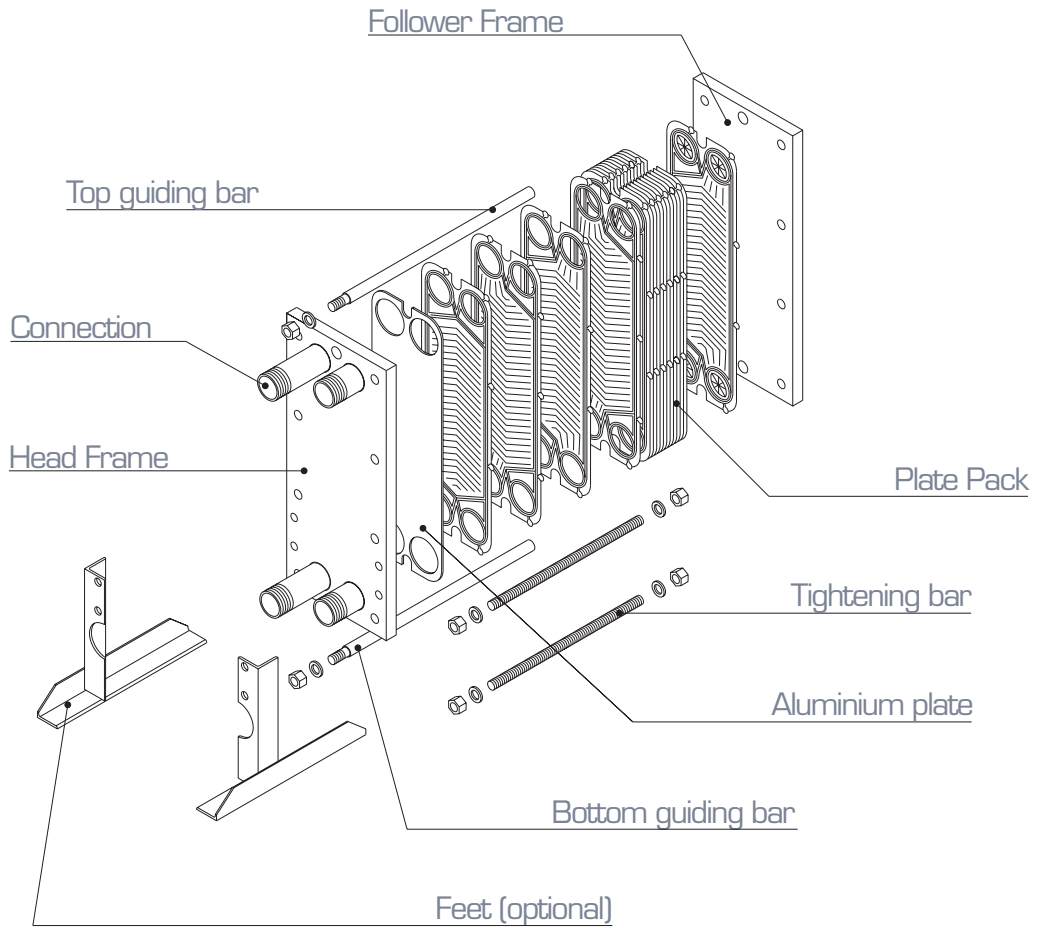


Moplen threaded connections



Flanged connections





N.P.	d	D
5	17	215
7	23	215
9	29	215
11	35	215
13	41	215
15	47	215
17	53	215
19	59	215
21	65	215
23	71	215
25	77	215
27	83	215
29	89	215
31	95	315
33	101	315
35	107	315
37	113	315
39	119	315
41	125	315
43	131	315
45	137	315
47	143	315
49	149	315

plate **080 plus**

Technical data

Exchange area, m ²	0,081
Width, mm	145
Height, mm	740
Connections diameter	DN 32 1"1/4
Channel capacity, l.	0,18
Steel thickness, mm	0,6
Plate thickness, mm	3,0
Plate weight (with gasket), Kg	0,50
Test pressure, bar	16 - 26 - 32 - 40
Max. working pressure, bar	10 - 16 - 20 - 25
Thermal length	A
Max. water flowrate, m ³ /h	14
Tightening measure, mm	3,0 x np + 2

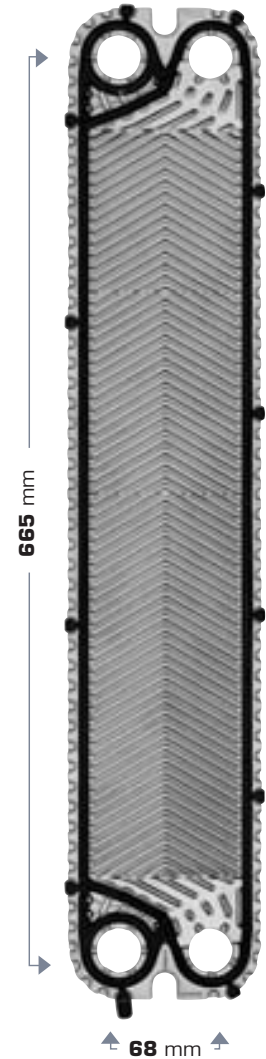
np = number of plates

Available gaskets

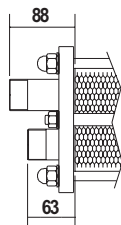
NBR	●
EPDM	●
EPDM prx	●
Viton	●

Available steel

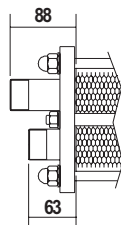
AISI 316L	●
254 SMO	●
Titanium	●



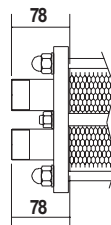
Galvanized threaded connections



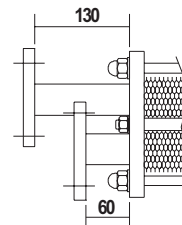
Stainless steel threaded connections

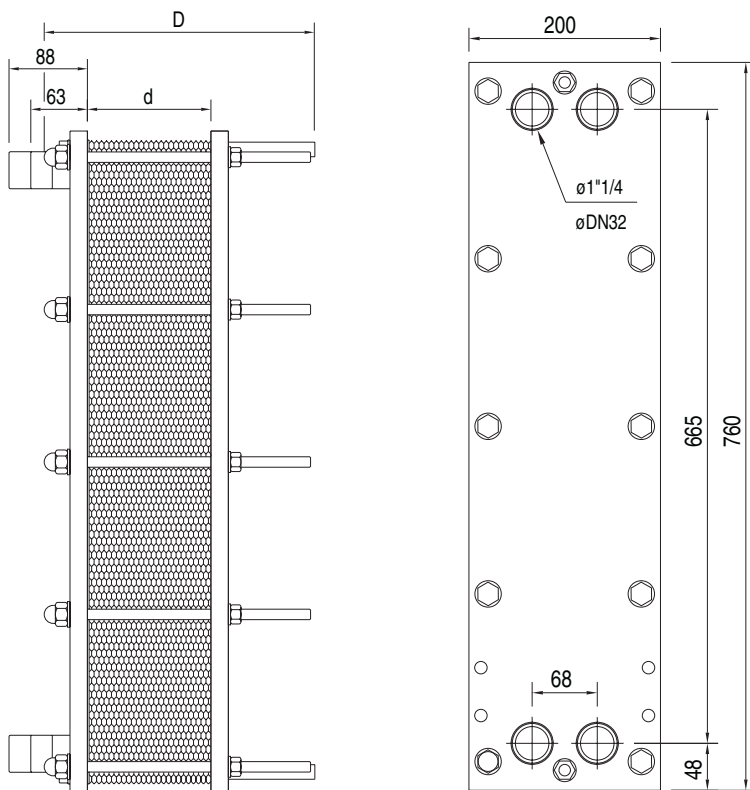
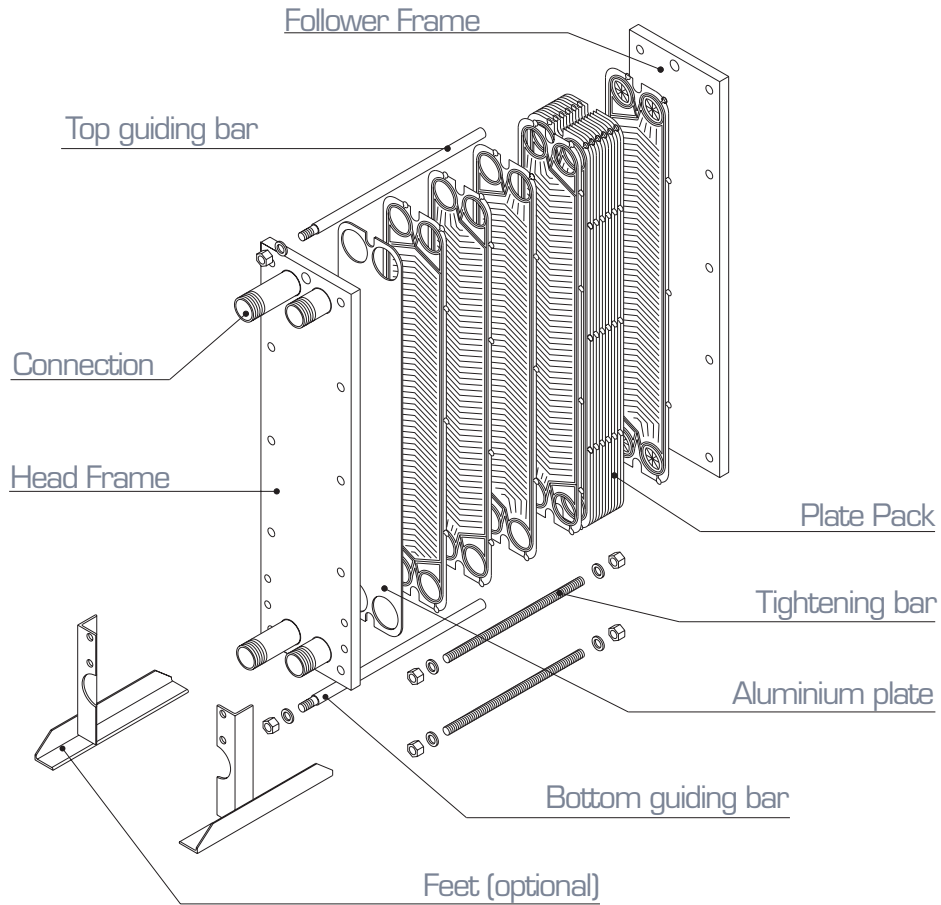


Moplen threaded connections



Flanged connections





N.P.	d	D	N.P.	d	D
5	17	215	41	125	315
7	23	215	43	131	315
9	29	215	45	137	315
11	35	215	47	143	315
13	41	215	49	149	315
15	47	215	51	151	515
17	53	215	53	157	515
19	59	215	55	163	515
21	65	215	57	169	515
23	71	215	59	175	515
25	77	215	61	181	515
27	83	215	63	189	515
29	89	215	65	195	515
31	95	315	67	201	515
33	101	315	69	207	515
35	107	315	71	213	515
37	113	315	73	219	515
39	119	315	75	225	515

plate 100

Technical data

Exchange area, m ²	0,100
Width, mm	189
Height, mm	642
Connections diameter	1"1/2 DN 40
Channel capacity, l.	0,20
Steel thickness, mm	0,6
Plate thickness, mm	3,1
Plate weight (with gasket), Kg	0,59
Test pressure, bar	21
Max. working pressure, bar	16
Thermal length	A+B
Max. water flowrate, m ³ /h	25
Tightening measure, mm	3,1 x np + 2

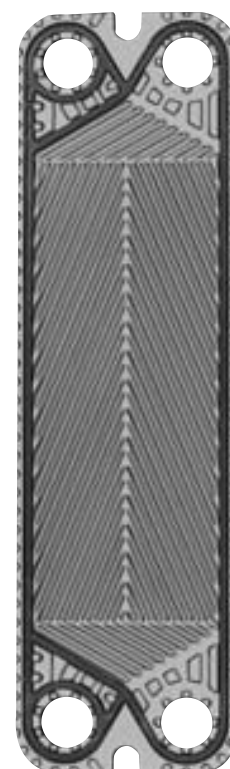
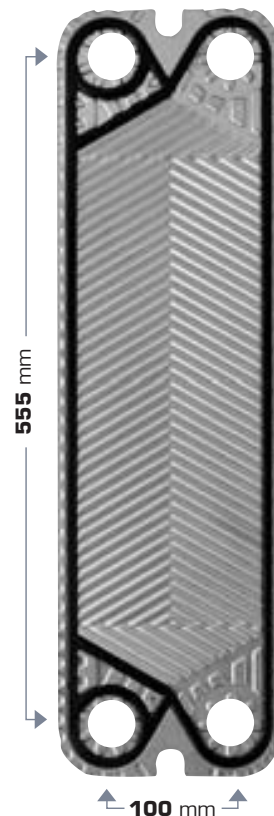
np = number of plates

Available gaskets

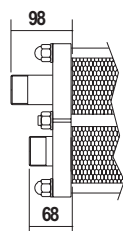
NBR	●
EPDM	
EPDM prx	●
Viton	●

Available steel

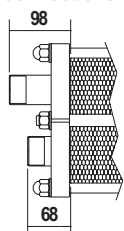
AISI 316L	●
254 SMO	●
Titanium	●



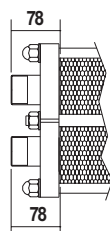
Galvanized threaded connections



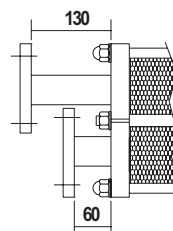
Stainless steel threaded connections

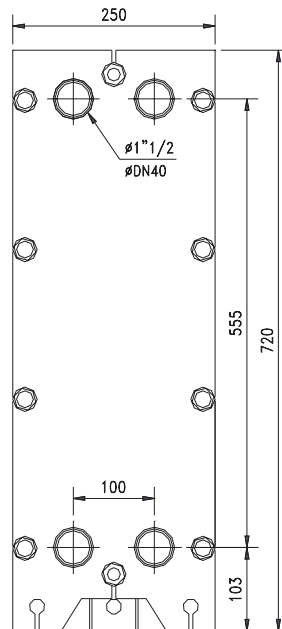
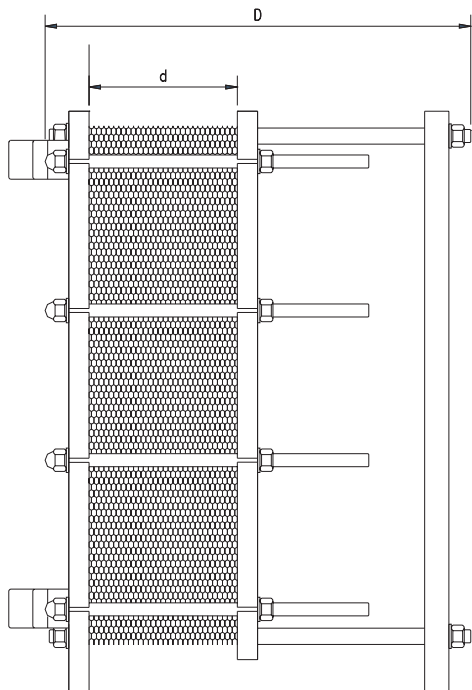
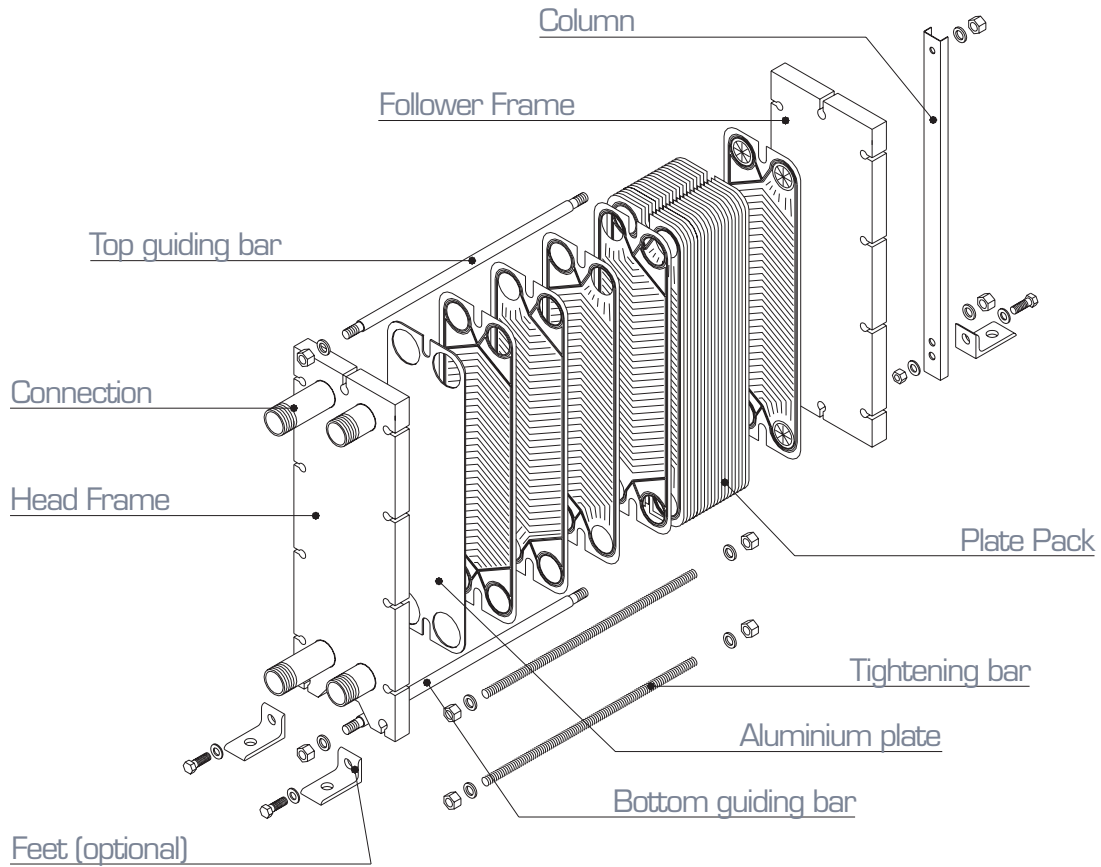


Moplen threaded connections



Flanged connections





N.P.	d*	d**	D	N.P.	d*	d**	D
5	17.5	15.5	505	55	172.5	170.5	510
7	23.7	21.7	505	57	178.7	176.7	510
9	29.9	27.9	505	59	184.9	182.9	510
11	36.1	34.1	505	61	191.1	189.1	510
13	42.3	40.3	505	63	197.3	195.3	510
15	48.5	46.5	505	65	203.5	201.5	510
17	54.7	52.7	505	67	209.7	207.7	710
19	60.9	58.9	505	69	215.9	213.9	710
21	67.1	65.1	505	71	222.1	220.1	710
23	73.3	71.3	505	73	228.3	226.3	715
25	79.5	77.5	505	75	234.5	232.5	715
27	85.7	83.7	505	77	240.7	238.7	715
29	91.9	89.9	505	79	246.9	244.9	715
31	98.1	96.1	505	81	253.1	251.1	715
33	104.3	102.3	505	83	259.3	257.3	715
35	110.5	108.5	505	85	265.5	263.5	715
37	116.7	114.7	505	87	271.7	269.7	715
39	122.9	120.9	505	89	277.9	275.9	715
41	129.1	127.1	505	91	284.1	282.1	715
43	135.3	133.3	510	93	290.3	288.3	715
45	141.5	139.5	510	95	296.5	294.5	715
47	147.7	145.7	510	97	302.7	300.7	715
49	153.9	151.9	510	99	308.9	306.9	715
51	160.1	158.1	510	101	315.1	313.1	715
53	166.3	164.3	510				

all dimensions are in mm

plate 125 plus

Technical data

Exchange area, m ²	0,125
Width, mm	241
Height, mm	723
Connections diameter	2"1/2 DN 65
Channel capacity, l.	0,27
Steel thickness, mm	0,6
Plate thickness, mm	3,35
Plate weight (with gasket), Kg	0,84
Test pressure, bar	25
Max. working pressure, bar	20
Thermal length	A+B
Max. water flowrate, m ³ /h	65
Tightening measure, mm	3,35 x np + 2

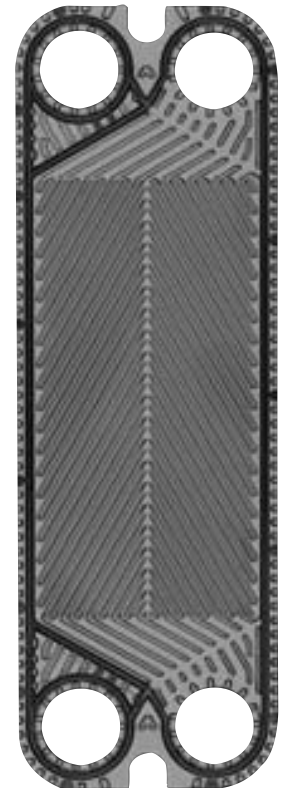
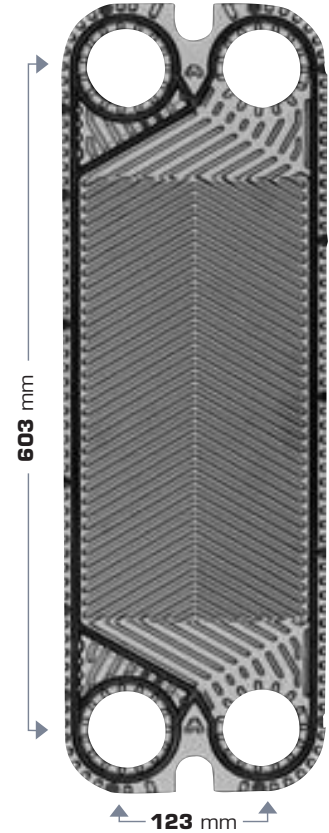
np = number of plates

Available gaskets

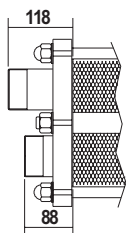
NBR	●
EPDM	●
EPDM prx	●
Viton	●

Available steel

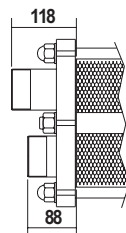
AISI 316L	●
254 SMO	
Titanium	



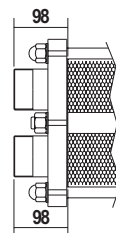
Galvanized threaded connections



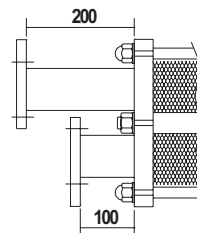
Stainless steel threaded connections

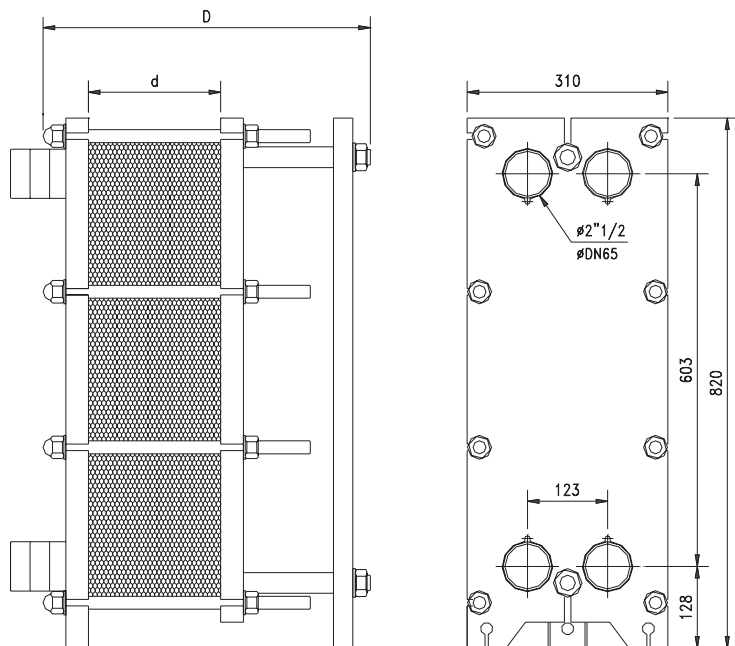
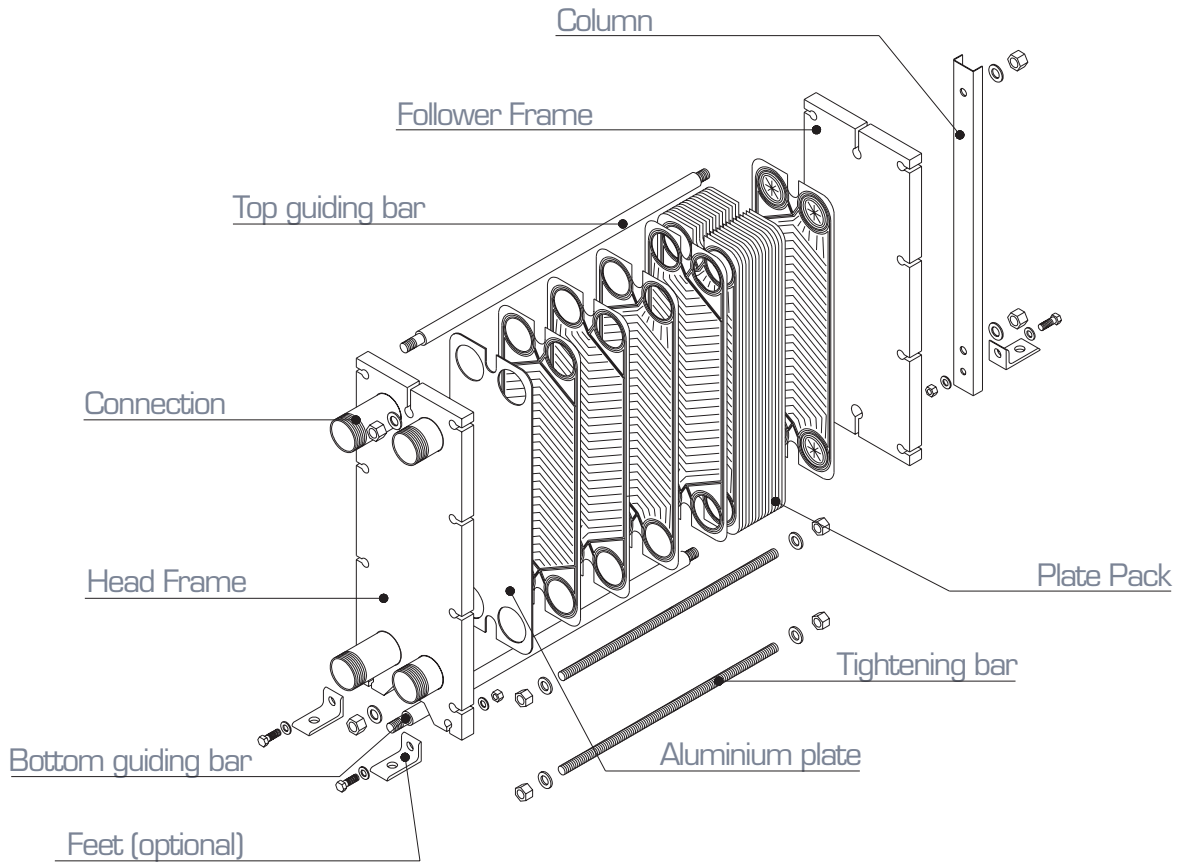


Moplen threaded connections



Flanged connections





N.P.	d*	d**	D	N.P.	d*	d**	D
5	18.8	16.8	510	69	233.2	231.2	920
7	25.5	23.5	510	71	239.9	237.9	920
9	32.2	30.2	510	73	246.6	244.6	920
11	38.9	36.9	510	75	253.3	251.3	920
13	45.6	43.6	510	77	260	258	920
15	52.3	50.3	510	79	266.7	264.7	920
17	59	57	510	81	273.4	271.4	920
19	65.7	63.7	510	83	280.1	278.1	920
21	72.4	70.4	510	85	286.8	284.8	920
23	79.1	77.1	510	87	293.5	291.5	920
25	85.8	83.8	510	89	300.2	298.2	920
27	92.5	90.5	510	91	306.9	304.9	920
29	99.2	97.2	510	93	313.6	311.6	920
31	105.9	103.9	510	95	320.3	318.3	920
33	112.6	110.6	510	97	327	325	920
35	119.3	117.3	510	99	333.7	331.7	920
37	126	124	510	101	340.4	338.4	920
39	132.7	130.7	510	103	347.1	345.1	920
41	139.4	137.4	510	105	353.8	351.8	920
43	146.1	144.1	510	107	360.5	358.5	920
45	152.8	150.8	510	109	367.2	365.2	920
47	159.5	157.5	510	111	373.9	371.9	920
49	166.2	164.2	510	113	380.6	378.6	920
51	172.9	170.9	510	115	387.3	385.3	920
53	179.6	177.6	510	117	394	392	920
55	186.3	184.3	510	119	400.7	398.7	920
57	193	191	510	121	407.4	405.4	920
59	199.7	197.7	510	123	414.1	412.1	920
61	206.4	204.4	510	125	420.8	418.8	920
63	213.1	211.1	510	127	427.5	425.5	920
65	219.8	217.8	510	129	434.2	432.2	920
67	226.5	224.5	920				

all dimensions are in mm

Technical data:

Exchange area, m ²	0,250
Width, mm	303
Height, mm	987
Connections diameter	3" DN 80
Channel capacity, l.	0,75
Steel thickness, mm	0,6
Plate thickness, mm	3,5
Plate weight (with gasket), Kg	1,5
Test pressure, bar	21
Max. working pressure, bar	16
Thermal length	A
Max. water flowrate, m ³ /h	100
Tightening measure, mm	3,5 x np

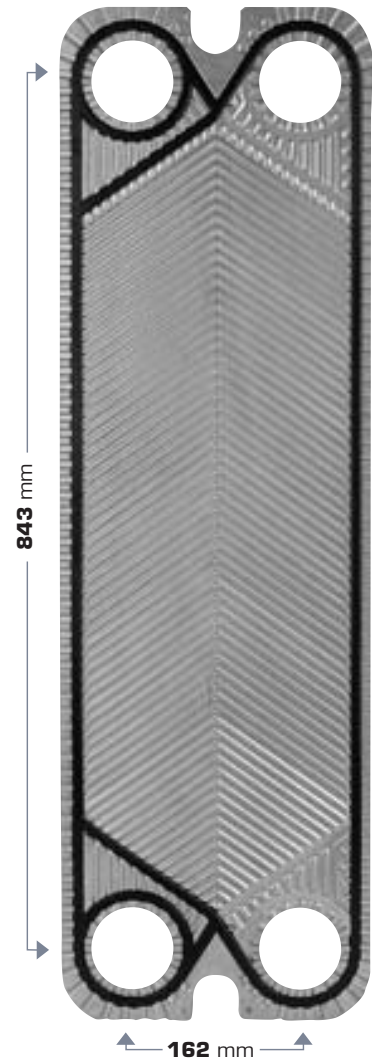
np = number of plates

Available gaskets

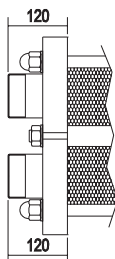
NBR	●
EPDM	●
EPDM prx	●
Viton	●

Available steel

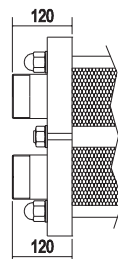
AISI 316L	●
254 SMO	●
Titanium	●



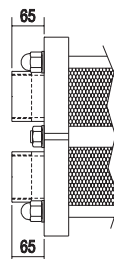
Stainless steel threaded connections



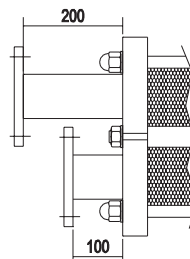
Moplen threaded connections

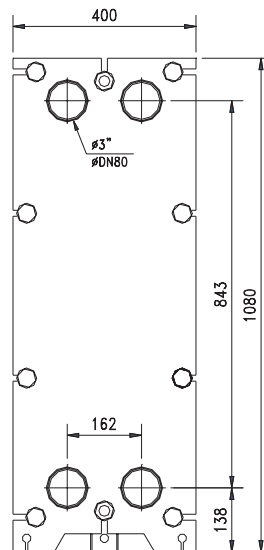
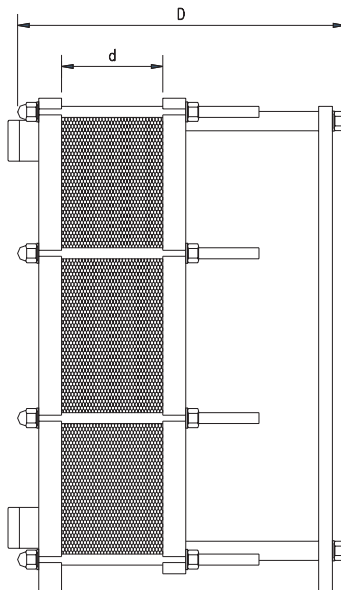
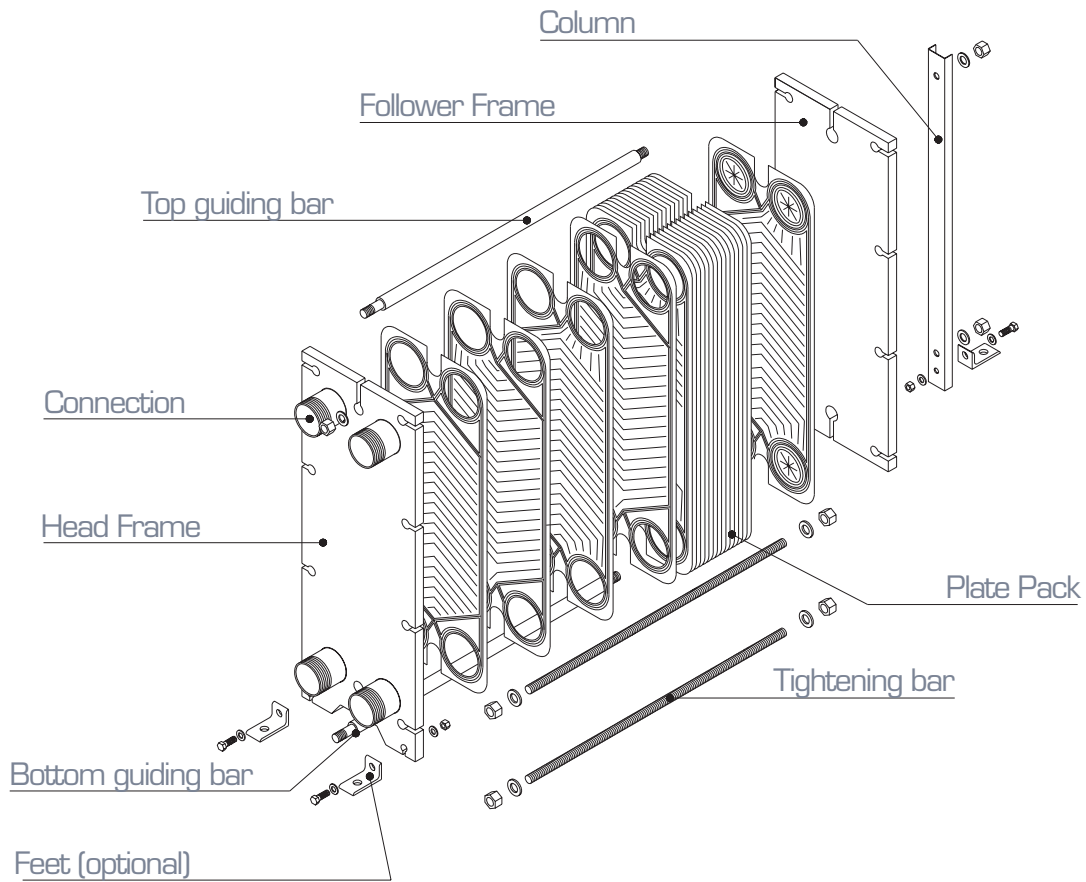


Welded connections



Flanged connections





all dimensions are in mm

N.P.	d	D	N.P.	d	D
5	17.5	716	79	276.5	1016
7	34.5	716	81	283.5	1016
9	31.5	716	83	290.5	1016
11	38.5	716	85	297.5	1016
13	45.5	716	87	304.5	1016
15	52.5	716	89	311.5	1016
17	59.5	716	91	318.5	1016
19	66.5	716	93	325.5	1016
21	73.5	716	95	332.5	1016
23	80.5	716	97	339.5	1016
25	87.5	716	99	346.5	1016
27	94.5	716	101	353.5	1016
29	101.5	716	103	360.5	1026
31	108.5	716	105	367.5	1026
33	115.5	716	107	374.5	1026
35	122.5	716	109	381.5	1026
37	129.5	716	111	388.5	1026
39	136.5	716	113	395.5	1026
41	143.5	716	115	402.5	1026
43	150.5	716	117	409.5	1026
45	157.5	716	119	416.5	1026
47	164.5	716	121	423.5	1026
49	171.5	716	123	430.5	1026
51	178.5	716	125	437.5	1026
53	185.5	716	127	444.5	1026
55	192.5	716	129	451.5	1026
57	199.5	716	131	458.5	1026
59	206.5	716	133	465.5	1026
61	213.5	716	135	472.5	1026
63	220.5	716	137	479.5	A M
65	227.5	716	139	486.5	A M
67	234.5	716	141	493.5	A M
69	241.5	716	143	500.5	A M
71	248.5	716	145	507.5	A M
73	255.5	1016	147	514.5	A M
75	262.5	1016	149	521.5	A M
77	269.5	1016	151	528.5	A M

Technical data

Exchange area, m ²	0,300
Width, mm	421
Height, mm	875
Connections diameter	4" DN 100
Channel capacity, l.	0,97
Steel thickness, mm	0,6
Plate thickness, mm	3
Plate weight (with gasket), Kg	1,61
Test pressure, bar	12
Max. working pressure, bar	8
Thermal length	A+B
Max. water flowrate, m ³ /h	200
Tightening measure, mm	3 x np

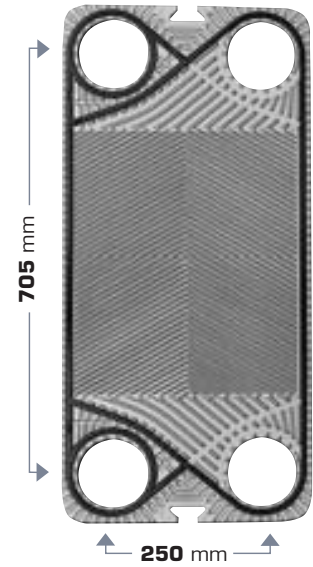
np = number of plates

Available gaskets

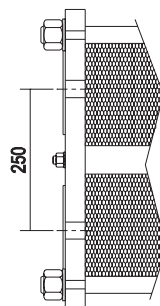
NBR	●
EPDM	●
EPDM prx	●
Viton	●

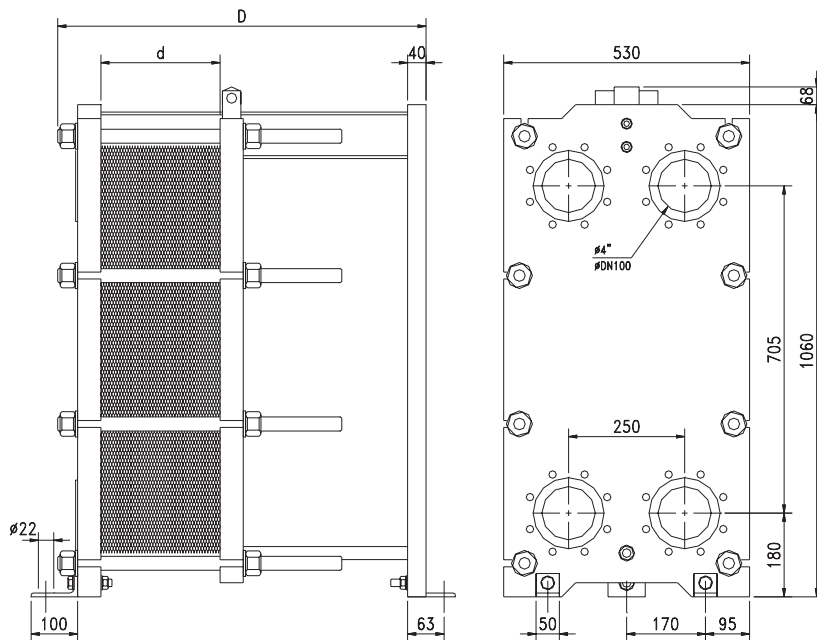
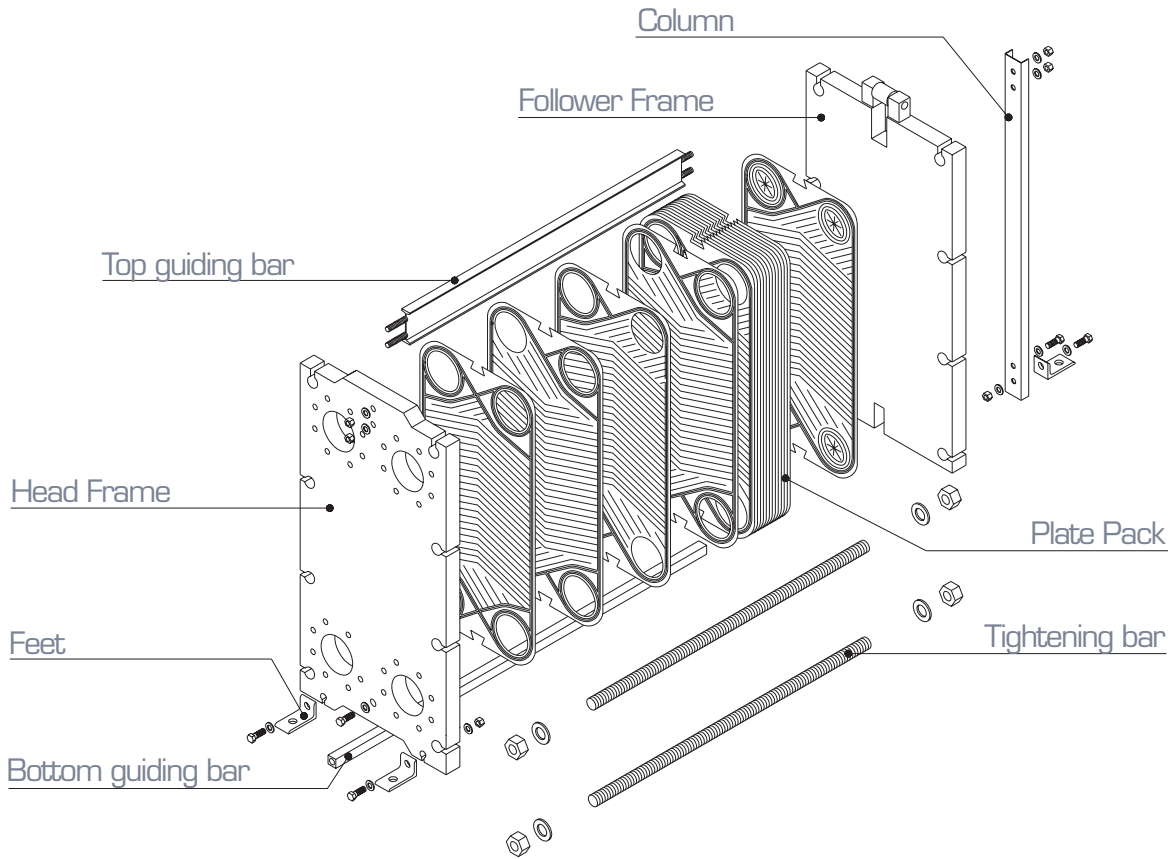
Available steel

AISI 304	●
AISI 316L	●
254 SMO	●
Titanium	●



Rubber liner, to be flanged





N.P.	d	D	N.P.	d	D
5	15	818	79	237	818
7	21	818	81	243	818
9	27	818	83	249	818
11	33	818	85	255	818
13	39	818	87	261	818
15	45	818	89	267	818
17	51	818	91	273	818
19	57	818	93	279	818
21	63	818	95	285	818
23	69	818	97	291	818
25	75	818	99	297	818
27	81	818	101	303	818
29	87	818	103	309	1123
31	93	818	105	315	1123
33	99	818	107	321	1123
35	105	818	109	327	1123
37	111	818	111	333	1123
39	117	818	113	339	1123
41	123	818	115	345	1123
43	129	818	117	351	1123
45	135	818	119	357	1123
47	141	818	121	363	1123
49	147	818	123	369	1123
51	153	818	125	375	1123
53	159	818	127	381	1123
55	165	818	129	387	1123
57	171	818	131	393	1123
59	177	818	133	399	1123
61	183	818	135	405	1123
63	189	818	137	411	1123
65	195	818	139	417	1123
67	201	818	141	423	1123
69	207	818	143	429	1123
71	213	818	145	435	1123
73	219	818	147	441	1123
75	225	818	149	447	1123
77	231	818	151	453	1123

all dimensions are in mm

Technical data

Exchange area, m ²	0,450
Width, mm	420
Height, mm	1320
Connections diameter	4" DN 100
Channel capacity, l.	1,3
Steel thickness, mm	0,6
Plate thickness, mm	3
Plate weight (with gasket), Kg	2,55
Test pressure, bar	12
Max. working pressure, bar	8
Thermal length	A+B
Max. water flowrate, m ³ /h	200
Tightening measure, mm	3 x np

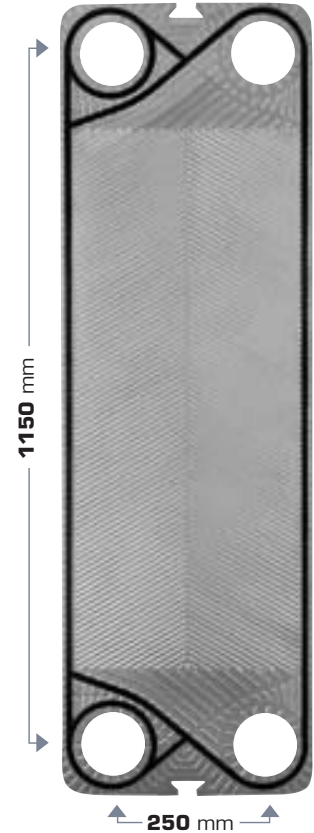
np = number of plates

Available gaskets

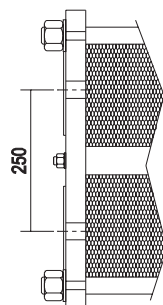
NBR	●
EPDM	●
EPDM prx	●
Viton	●

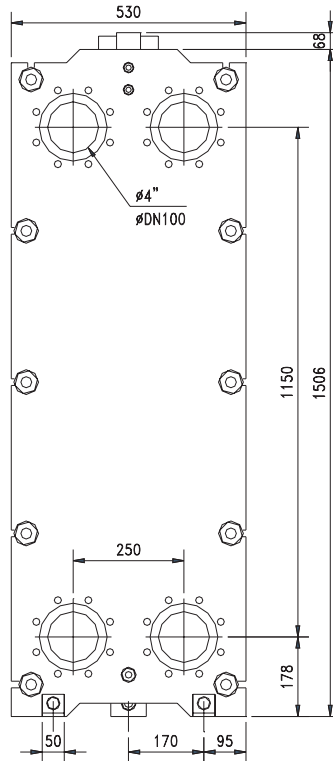
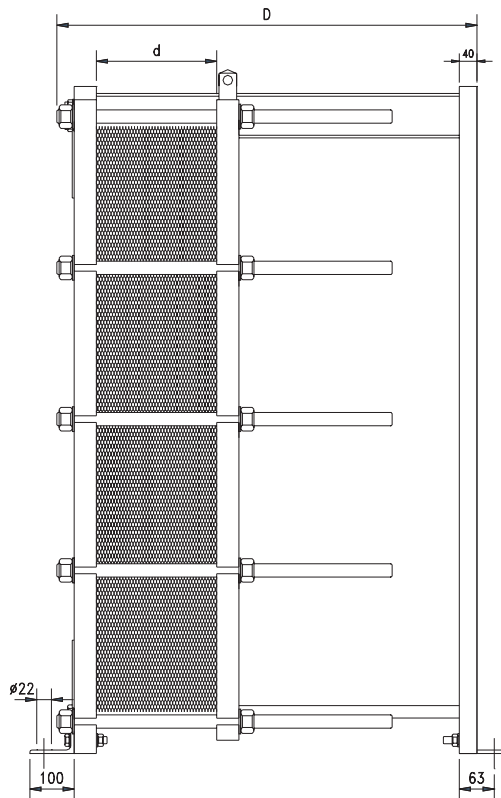
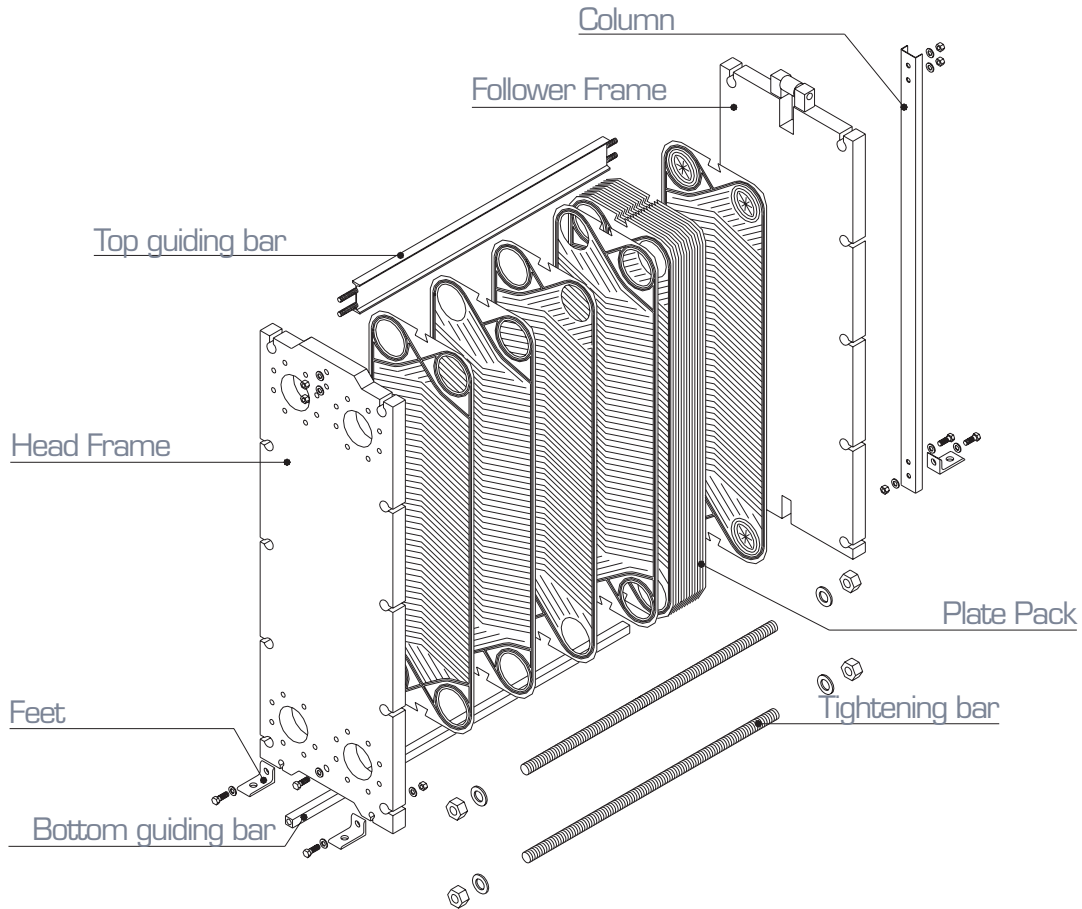
Available steel

AISI 304	●
AISI 316L	●
254 SMO	●
Titanium	●



Rubber liner, to be flanged





N.P.	d	D	N.P.	d	D
5	15	818	79	237	818
7	21	818	81	243	818
9	27	818	83	249	818
11	33	818	85	255	818
13	39	818	87	261	818
15	45	818	89	267	818
17	51	818	91	273	818
19	57	818	93	279	818
21	63	818	95	285	818
23	69	818	97	291	818
25	75	818	99	297	818
27	81	818	101	303	818
29	87	818	103	309	1123
31	93	818	105	315	1123
33	99	818	107	321	1123
35	105	818	109	327	1123
37	111	818	111	333	1123
39	117	818	113	339	1123
41	123	818	115	345	1123
43	129	818	117	351	1123
45	135	818	119	357	1123
47	141	818	121	363	1123
49	147	818	123	369	1123
51	153	818	125	375	1123
53	159	818	127	381	1123
55	165	818	129	387	1123
57	171	818	131	393	1123
59	177	818	133	399	1123
61	183	818	135	405	1123
63	189	818	137	411	1123
65	195	818	139	417	1123
67	201	818	141	423	1123
69	207	818	143	429	1123
71	213	818	145	435	1123
73	219	818	147	441	1123
75	225	818	149	447	1123
77	231	818	151	453	1123

all dimensions are in mm

plate **650 plus**

Technical data

Exchange area, m ²	0,650
Width, mm	631
Height, mm	1335
Connections diameter	8" DN 200
Channel capacity, l.	1,8
Steel thickness, mm	0,6
Plate thickness, mm	3,4
Plate weight (with gasket), Kg	4,45
Test pressure, bar	21
Max. working pressure, bar	16
Thermal length	A+B
Max. water flowrate, m ³ /h	400
Tightening measure, mm	3,4 x np

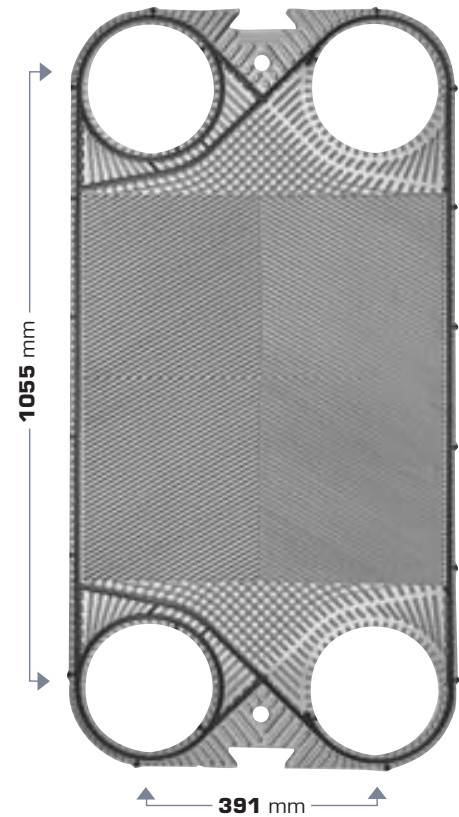
np = number of plates

Available gaskets

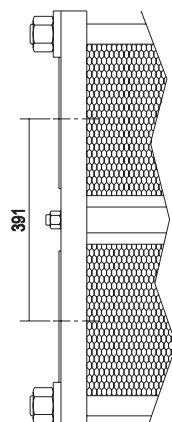
NBR	●
EPDM	●
EPDM prx	●
Viton	●

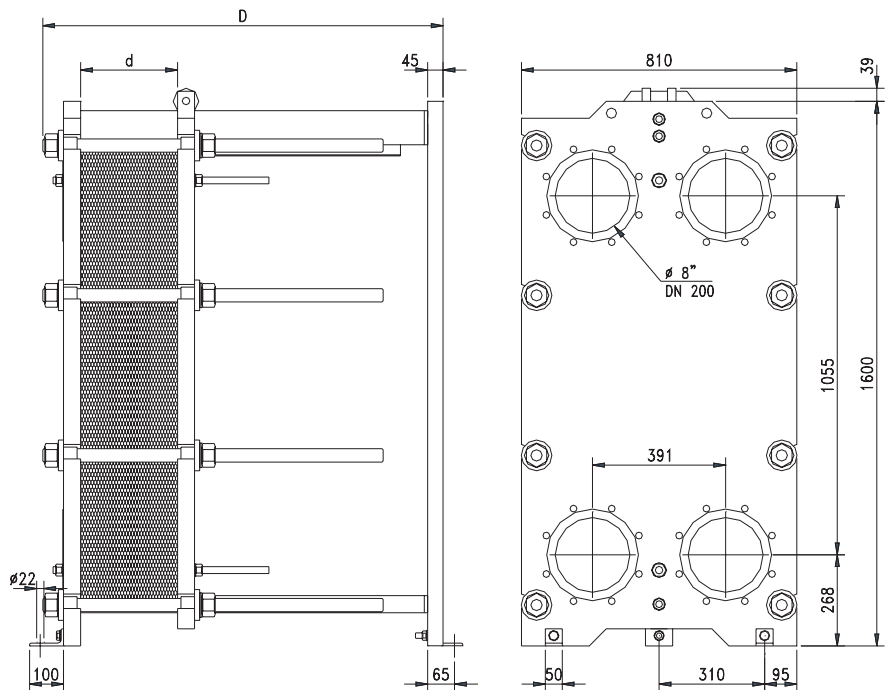
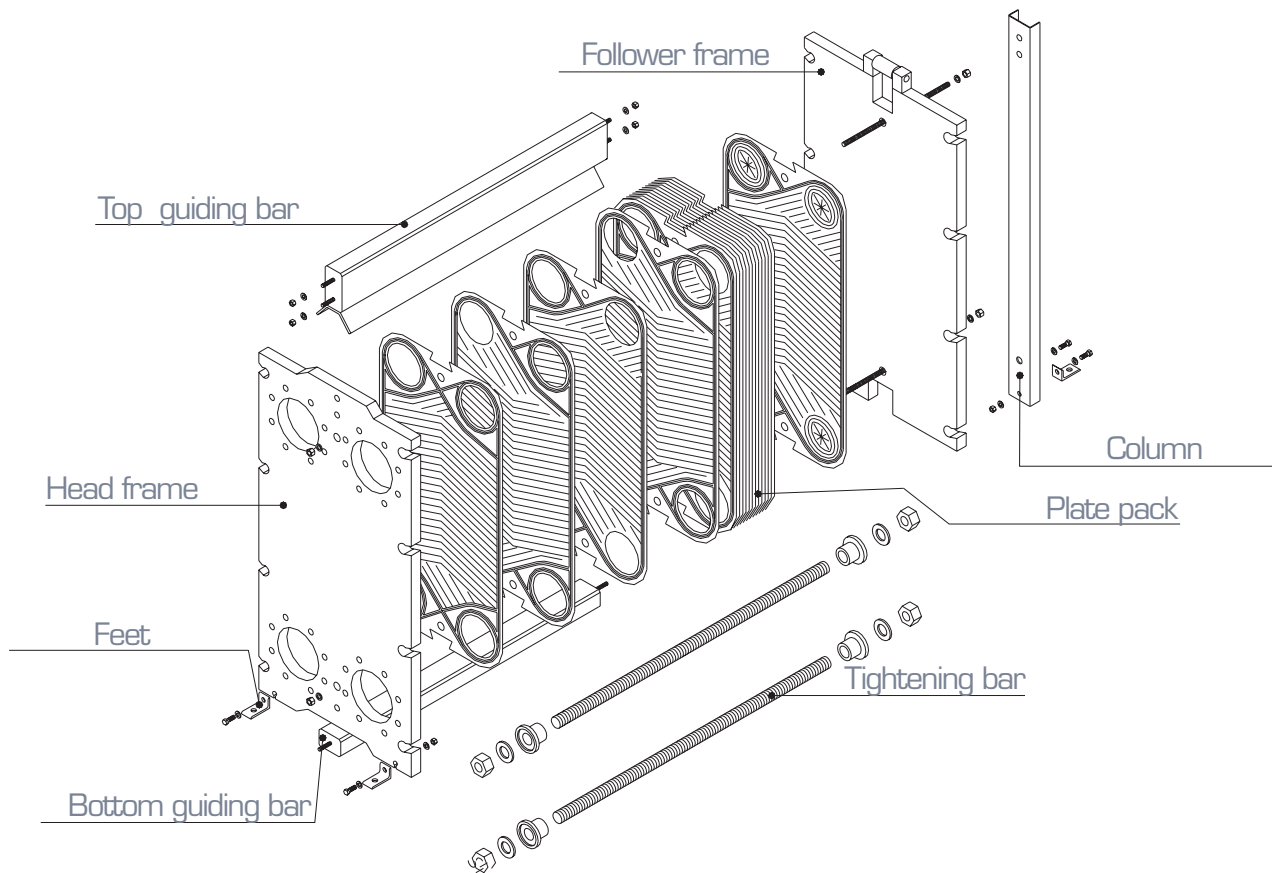
Available steel

AISI 304	●
AISI 316L	●
254 SMO	
Titanium	



Rubber liner, to be flanged





N.P.	d	D	N.P.	d	D
5	17	1170	79	268.6	1170
7	23.8	1170	81	275.4	1170
9	30.6	1170	83	282.2	1170
11	37.4	1170	85	289	1170
13	44.2	1170	87	295.8	1170
15	51	1170	89	302.6	1170
17	57.8	1170	91	309.4	1170
19	64.6	1170	93	316.2	1170
21	71.4	1170	95	323	1170
23	78.2	1170	97	329.8	1170
25	85	1170	99	336.6	1170
27	91.8	1170	101	343.4	1170
29	98.6	1170	103	350.2	1680
31	105.4	1170	105	357	1680
33	112.2	1170	107	363.8	1680
35	119	1170	109	370.6	1680
37	125.8	1170	111	377.4	1680
39	132.6	1170	113	384.2	1680
41	139.4	1170	115	391	1680
43	146.2	1170	117	397.8	1680
45	153	1170	119	404.6	1680
47	159.8	1170	121	411.4	1680
49	166.6	1170	123	418.2	1680
51	173.4	1170	125	425	1680
53	180.2	1170	127	431.8	1680
55	187	1170	129	438.6	1680
57	193.8	1170	131	445.4	1680
59	200.6	1170	133	452.2	1680
61	207.4	1170	135	459	1680
63	214.2	1170	137	465.8	1680
65	221	1170	139	472.6	1680
67	227.8	1170	141	479.4	1680
69	234.6	1170	143	486.2	1680
71	241.4	1170	145	493	1680
73	248.2	1170	147	499.8	1680
75	255	1170	149	506.6	1680
77	261.8	1170	151	513.4	1680

all dimensions are in mm