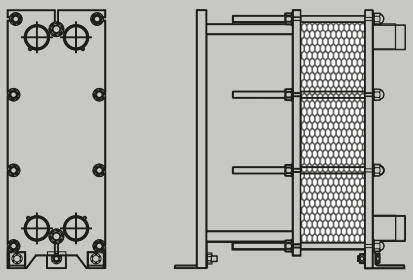
27021769 – EN – rev. 00 10/2023

Riello HEATGATE

Heat exchangers

Plate heat exchangers for heat generators,
heat pumps and solar applications

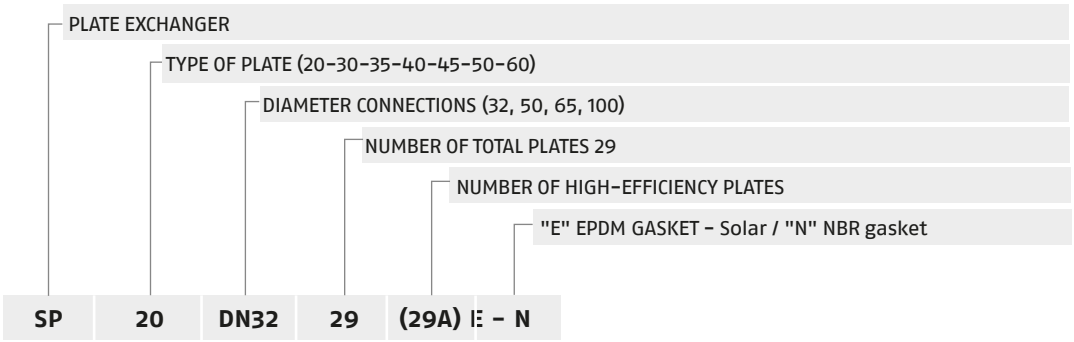


Riello HEATGATE

PRODUCT OVERVIEW

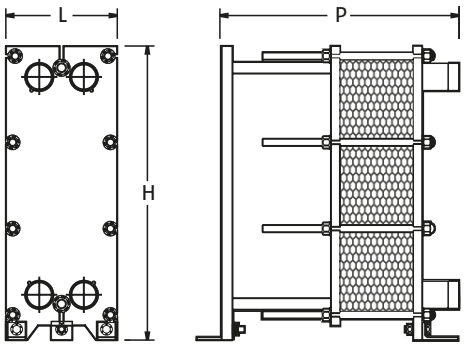
HEATgate is the range of inspectable plate heat exchangers developed to meet the largest number of applications. The technical features make it a valuable product that can stand the test of time and ensure maximum performance throughout the life of the product.
The range consists of exchangers with AISI 316 L steel plates, available in versions with NBR or EPDM peroxide gaskets depending on the application; it also has AISI 316 threaded connections for SP 20-30-35-40-45-50 models or flanged connections for SP 60 models.
The design of the exchanger ensures tightness up to 10 bar, with operating temperatures up to 110°C (classification exempt from the application of the European PED Directive 2014/68/EU, formerly 97/23/EC).

MODEL DESIGNATION



RANGE

DESCRIPTION	N. Plates from-to	H mm	L mm	P mm
SP 20	11-29	470	200	252
	41-49	470	200	352
SP 30	17-27	755	200	252
	37	755	200	352
	53-69	755	200	552
SP 35	21-41	678	310	408
	49-71	678	310	548
	81-117	678	310	688
SP 40	17-41	729	385	408
SP 45	21-39	1008	310	408
	45-61	1008	310	548
	73	1008	310	688
SP 50	35-41	992	385	408
	45-71	992	385	548
	79-101	992	385	688
SP 60	41-101	1124	509	790
	109-201	1124	509	1290



TECHNICAL DATA

Model	No. Plates	DN	MIX (*) %	Weight kg	Kit type	
					Insulation	Feets
AISI 316 L PLATE HEAT EXCHANGERS, WITH EPDM GASKETS						
SP 20-DN32 29 (29A) E	29	Rp 1" 1/4 (Gas - M)	100%	31,3	C1 kit	P1 kit
SP 20-DN32 41 (41A) E	41	Rp 1" 1/4 (Gas - M)	100%	34,7	C2 kit	P1 kit
SP 30-DN32 17 (17A) E	17	Rp 1" 1/4 (Gas - M)	100%	45	C3 kit	P1 kit
SP 30-DN32 27 (27A) E	27	Rp 1" 1/4 (Gas - M)	100%	48,7	C3 kit	P1 kit
SP 30-DN32 37 (37A) E	37	Rp 1" 1/4 (Gas - M)	100%	53,4	C4 kit	P1 kit
SP 30-DN32 53 (53A) AND	53	Rp 1" 1/4 (Gas - M)	100%	61,5	C5 kit	P1 kit
SP 30-DN32 69 (69A) E	69	Rp 1" 1/4 (Gas - M)	100%	67,4	C5 kit	P1 kit
SP 45-DN50 21 (11) E	21	Rp 2" (Gas - M)	50%	119,7	C10 kit	P2 kit
SP 45-DN50 29 (15) E	29	Rp 2" (Gas - M)	50%	125,2	C10 kit	P2 kit
SP 45-DN50 33 (17) E	33	Rp 2" (Gas - M)	50%	128	C10 kit	P2 kit
SP 45-DN50 39 (20) E	39	Rp 2" (Gas - M)	50%	132,2	C10 kit	P2 kit
SP 45-DN50 45 (23) E	45	Rp 2" (Gas - M)	50%	140,6	C11 kit	P2 kit
SP 45-DN50 51 (26) E	51	Rp 2" (Gas - M)	50%	144,7	C11 kit	P2 kit
SP 45-DN50 61 (31) E	61	Rp 2" (Gas - M)	50%	151,6	C11 kit	P2 kit
SP 45-DN50 73 (37) E	73	Rp 2" (Gas - M)	50%	164,2	C12 kit	P2 kit
SP 50-DN65 69 (52) E	69	Rp 2" 1/2 (Gas - M)	75%	217,7	C15 kit	P2 kit
SP 50-DN65 87 (66) E	87	Rp 2" 1/2 (Gas - M)	75%	238,1	C16 kit	P2 kit
SP 50-DN65 101 (76) E	101	Rp 2" 1/2 (Gas - M)	75%	250,1	C16 kit	P2 kit
SP 60-DN100 87 (87) E	87	DN100 - PN16	100%	375,7	C17 kit	P3 kit
SP 60-DN100 101 (101) E	101	DN100 - PN16	100%	391,7	C17 kit	P3 kit
SP 60-DN100 115 (115) E	115	DN100 - PN16	100%	431,2	C18 kit	P3 kit
SP 60-DN100 129 (129) E	129	DN100 - PN16	100%	447,1	C18 kit	P3 kit
AISI 316 L PLATE EXCHANGERS, WITH NBR GASKETS						
SP 20-DN32 11 (11) N	11	Rp 1" 1/4 (Gas - M)	100%	27,1	C1 kit	P1 kit
SP 20-DN32 21 (21) N	21	Rp 1" 1/4 (Gas - M)	100%	29,4	C1 kit	P1 kit
SP 20-DN32 29 (29) N	29	Rp 1" 1/4 (Gas - M)	100%	31,2	C1 kit	P1 kit
SP 20-DN32 41 (41) N	41	Rp 1" 1/4 (Gas - M)	100%	34,8	C2 kit	P1 kit
SP 20-DN32 49 (49) N	49	Rp 1" 1/4 (Gas - M)	100%	36,6	C2 kit	P1 kit
SP 35-DN50 21 (21) N	21	Rp 2" (Gas - M)	100%	79,2	C6 kit	P2 kit
SP 35-DN50 27 (27) N	27	Rp 2" (Gas - M)	100%	81,7	C6 kit	P2 kit
SP 35-DN50 33 (33) N	33	Rp 2" (Gas - M)	100%	84,3	C6 kit	P2 kit
SP 35-DN50 41 (41) N	41	Rp 2" (Gas - M)	100%	87,7	C6 kit	P2 kit
SP 35-DN50 49 (49) N	49	Rp 2" (Gas - M)	100%	94,7	C7 kit	P2 kit
SP 35-DN50 53 (53) N	53	Rp 2" (Gas - M)	100%	96,4	C7 kit	P2 kit
SP 35-DN50 61 (61) N	61	Rp 2" (Gas - M)	100%	99,8	C7 kit	P2 kit
SP 35-DN50 71 (71) N	71	Rp 2" (Gas - M)	100%	104,1	C7 kit	P2 kit
SP 35-DN50 81 (81) N	81	Rp 2" (Gas - M)	100%	111,9	C8 kit	P2 kit
SP 35-DN50 89 (89) N	89	Rp 2" (Gas - M)	100%	115,3	C8 kit	P2 kit
SP 35-DN50 101 (101) N	101	Rp 2" (Gas - M)	100%	120,4	C8 kit	P2 kit
SP 35-DN50 117 (117) N	117	Rp 2" (Gas - M)	100%	124,1	C8 kit	P2 kit
SP 40-DN65 17 (17) N	17	Rp 2" 1/2 (Gas - M)	100%	102,3	C13 kit	P2 kit
SP 40-DN65 21 (21) N	21	Rp 2" 1/2 (Gas - M)	100%	104,7	C13 kit	P2 kit
SP 40-DN65 25 (25) N	25	Rp 2" 1/2 (Gas - M)	100%	107	C13 kit	P2 kit
SP 40-DN65 33 (33) N	33	Rp 2" 1/2 (Gas - M)	100%	111,7	C13 kit	P2 kit
SP 40-DN65 41 (41) N	41	Rp 2" 1/2 (Gas - M)	100%	116,4	C13 kit	P2 kit
SP 50-DN65 35 (14) N	35	Rp 2" 1/2 (Gas - M)	40%	183,6	C14 kit	P2 kit
SP 50-DN65 41 (17) N	41	Rp 2" 1/2 (Gas - M)	40%	188,7	C14 kit	P2 kit
SP 50-DN65 45 (18) N	45	Rp 2" 1/2 (Gas - M)	40%	197,1	C15 kit	P2 kit
SP 50-DN65 51 (21) N	51	Rp 2" 1/2 (Gas - M)	40%	202,2	C15 kit	P2 kit
SP 50-DN65 55 (22) N	55	Rp 2" 1/2 (Gas - M)	40%	205,7	C15 kit	P2 kit
SP 50-DN65 61 (25) N	61	Rp 2" 1/2 (Gas - M)	40%	210,8	C15 kit	P2 kit
SP 50-DN65 65 (26) N	65	Rp 2" 1/2 (Gas - M)	40%	214,3	C15 kit	P2 kit
SP 50-DN65 71 (29) N	71	Rp 2" 1/2 (Gas - M)	40%	219,4	C15 kit	P2 kit
SP 50-DN65 79 (32) N	79	Rp 2" 1/2 (Gas - M)	40%	231,2	C16 kit	P2 kit
SP 60-DN100 41 (33) N	41	DN100 - PN16	80%	323,7	C17 kit	P3 kit

COMPLEMENTARY ITEMS

Heat exchangers

Model	No. Plates	DN	MIX (*) %	Weight kg	Kit type	
					Insulation	Feets
SP 60-DN100 45 (36) N	45	DN100 - PN16	80%	328,3	C17 kit	P3 kit
SP 60-DN100 51 (41) N	51	DN100 - PN16	80%	335,2	C17 kit	P3 kit
SP 60-DN100 61 (49) N	61	DN100 - PN16	80%	346,8	C17 kit	P3 kit
SP 60-DN100 67 (54) N	67	DN100 - PN16	80%	353,7	C17 kit	P3 kit
SP 60-DN100 77 (62) N	77	DN100 - PN16	80%	365,3	C17 kit	P3 kit
SP 60-DN100 87 (70) N	87	DN100 - PN16	80%	376,8	C17 kit	P3 kit
SP 60-DN100 97 (78) N	97	DN100 - PN16	80%	388,4	C17 kit	P3 kit
SP 60-DN100 109 (88) N	109	DN100 - PN16	80%	425,7	C18 kit	P3 kit
SP 60-DN100 119 (96) N	119	DN100 - PN16	80%	437,3	C18 kit	P3 kit
SP 60-DN100 139 (112) N	139	DN100 - PN16	80%	460,4	C18 kit	P3 kit
SP 60-DN100 169 (136) N	169	DN100 - PN16	80%	495	C18 kit	P3 kit
SP 60-DN100 201 (161) N	201	DN100 - PN16	80%	532	C18 kit	P3 kit

(*) % of high efficiency plates over the total number of plates.

EXCHANGERS

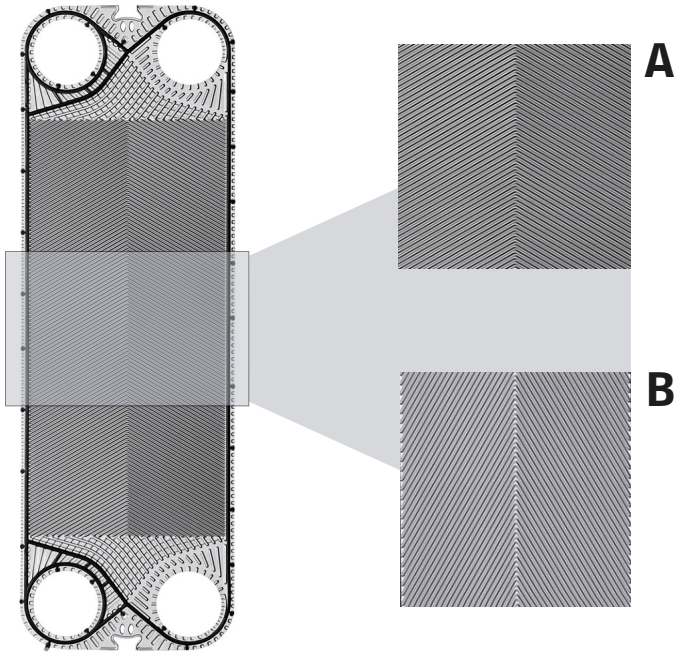
Model	UoM	SP20	SP30	SP 35	SP 40	SP45	SP50	SP 60
Single plate exchange area	m^2	0,041	0,081	0,078	0,118	0,164	0,210	0,268
Plate material		AISI 316L	AISI 316L	AISI 316L	AISI 316L	AISI 316L	AISI 316L	AISI 316L
Width	mm	145	145	245	320	245	320	425
Height	mm	455	740	527	584	857	848	877
Connection diameter		DN 32 1"1/4	DN 32 1"1/4	DN 50 2"	DN 65 2"1/2	DN 50 2"	DN 65 2"1/2	DN 100 4"
Plate thickness	mm	0,4	0,4	0,4	0,4	0,4	0,4	0,4
tube capacity	l	0,103	0,181	0,217	0,335	0,383	0,520	0,766
Frame material		Carbon steel painted RAL 7024						
PS (maximum working pressure)	bar	10	10	10	10	10	10	10

TYPE OF PLATES

HEATgate exchangers are available with 2 types of plates:

- Type "A": "high efficiency" plates (open corrugation angle) characterized by higher turbulence (water advance is more hindered due to the corrugation angle) resulting in higher heat transfer and higher pressure drop
- Type "B": low pressure drop plates (closed corrugation angle) characterized by lower turbulence (water advance is easier due to the corrugation angle) resulting in lower heat transfer and lower pressure drop

Plate types can be present individually or simultaneously in the same exchanger; for more information, check the percentage of plates in "high efficiency" given in the technical data table.



TYPE OF GASKETS

HEATgate exchangers are available with 2 types of gaskets:

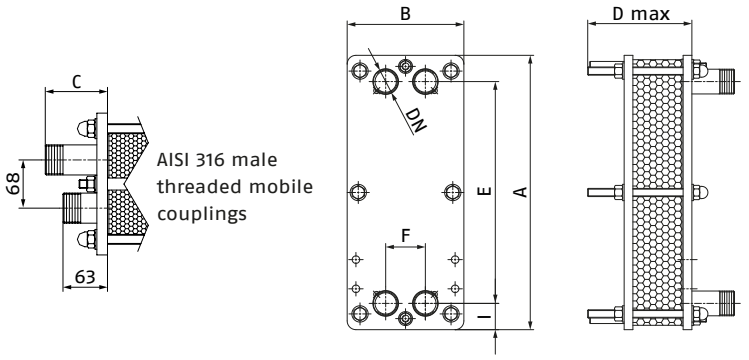
- NBR (letter "N" at the end of the name): range of use: -10°C ÷ +110°C, good resistance to mineral oils and greases, good resistance to water and radiator fluid, good resistance to tearing and abrasion, good flexibility. Poor resistance to ozone, weathering, direct sunlight. Not resistant to glycol-based fluids (> +60°C), poor resistance to polar fluids (ketones, ethers, esters) chlorinated hydrocarbons, aromatic solvents
- EPDM Prx (letter "E" at the end of the name): application range: -10°C ÷ +160°C, resistant to aging and weathering, non-mineral oils, high temperature glycols (> +60°C) and water. Poor resistance to mineral oils and greases

OVERALL DIMENSIONS (CHASSIS)

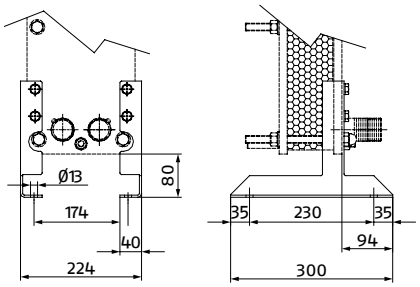
SP20-DN32 models
SP30-DN32 models

Model	N. Plates	DN	Mix (%)	Gasket
SP 20 - DN32 11 (11) N	11	DN32 - 1" 1/4 M	100	NBR
SP 20 - DN32 21 (21) N	21	DN32 - 1" 1/4 M	100	NBR
SP 20 - DN32 29 (29A) E	29	DN32 - 1" 1/4 M	100	EPDM Prx.
SP 20 - DN32 29 (29) N	29	DN32 - 1" 1/4 M	100	NBR
SP 20 - DN32 41 (41A) E	41	DN32 - 1" 1/4 M	100	EPDM Prx.
SP 20 - DN32 41 (41) N	41	DN32 - 1" 1/4 M	100	NBR
SP 20 - DN32 49 (49) N	49	DN32 - 1" 1/4 M	100	NBR
SP 30 - DN32 17 (17A) E	17	DN32 - 1" 1/4 M	100	EPDM Prx.
SP 30 - DN32 27 (27A) E	27	DN32 - 1" 1/4 M	100	EPDM Prx.
SP 30 - DN32 37 (37A) E	37	DN32 - 1" 1/4 M	100	EPDM Prx.
SP 30 - DN32 53 (53A) E	53	DN32 - 1" 1/4 M	100	EPDM Prx.
SP 30 - DN32 69 (69A) E	69	DN32 - 1" 1/4 M	100	EPDM Prx.

Heat exchanger



Foot kit (optional)



Section view

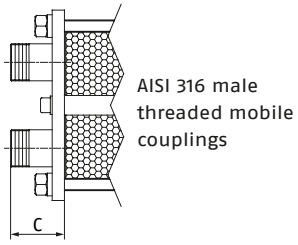
Model	A [mm]	B [mm]	C [mm]	E [mm]	F [mm]	G [mm]	H [mm]	I [mm]	D [mm]	Weight [kg]
SP 20 - DN32 11 (11) N	470	200	88	380	68	-	-	45	185	27
SP 20 - DN32 21 (21) N	470	200	88	380	68	-	-	45	185	29
SP 20 - DN32 29 (29A) E	470	200	88	380	68	-	-	45	185	31
SP 20 - DN32 29 (29) N	470	200	88	380	68	-	-	45	185	31
SP 20 - DN32 41 (41A) E	470	200	88	380	68	-	-	45	285	35
SP 20 - DN32 41 (41) N	470	200	88	380	68	-	-	45	285	35
SP 20 - DN32 49 (49) N	470	200	88	380	68	-	-	45	285	37
SP 30 - DN32 17 (17A) E	755	200	88	655	68	-	-	45	185	45
SP 30 - DN32 27 (27A) E	755	200	88	655	68	-	-	45	185	49
SP 30 - DN32 37 (37A) E	755	200	88	655	68	-	-	45	285	53
SP 30 - DN32 53 (53A) E	755	200	88	655	68	-	-	45	485	62
SP 30 - DN32 69 (69A) E	755	200	88	655	68	-	-	45	485	67

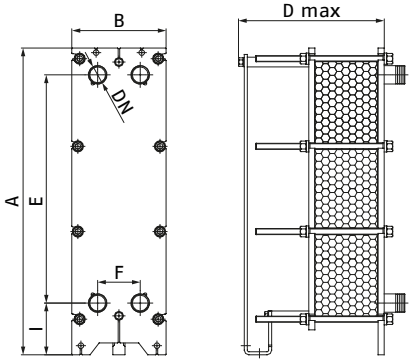
NOTE: To derive the total footprint, add the corresponding connection dimension (C) to the dimension (D).

Models SP 35 – DN50
Models SP 45 – DN50

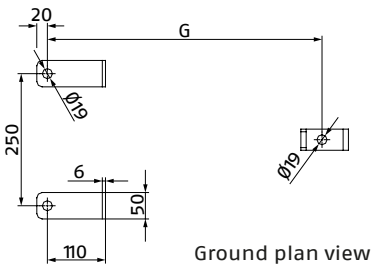
Model	N. Plates	DN	Mix (%)	Gasket
SP 35-DN50 21 (21) N	21	Rp 2" (Gas – M)	100	NBR
SP 35-DN50 27 (27) N	27	Rp 2" (Gas – M)	100	NBR
SP 35-DN50 33 (33) N	33	Rp 2" (Gas – M)	100	NBR
SP 35-DN50 41 (41) N	41	Rp 2" (Gas – M)	100	NBR
SP 35-DN50 49 (49) N	49	Rp 2" (Gas – M)	100	NBR
SP 35-DN50 53 (53) N	53	Rp 2" (Gas – M)	100	NBR
SP 35-DN50 61 (61) N	61	Rp 2" (Gas – M)	100	NBR
SP 35-DN50 71 (71) N	71	Rp 2" (Gas – M)	100	NBR
SP 35-DN50 81 (81) N	81	Rp 2" (Gas – M)	100	NBR
SP 35-DN50 89 (89) N	89	Rp 2" (Gas – M)	100	NBR
SP 35-DN50 101 (101) N	101	Rp 2" (Gas – M)	100	NBR
SP 35-DN50 117 (117) N	117	Rp 2" (Gas – M)	100	NBR
SP 45-DN50 21 (11) E	21	Rp 2" (Gas – M)	50	EPDM Prx.
SP 45-DN50 29 (15) E	29	Rp 2" (Gas – M)	50	EPDM Prx.
SP 45-DN50 33 (17) E	33	Rp 2" (Gas – M)	50	EPDM Prx.
SP 45-DN50 39 (20) E	39	Rp 2" (Gas – M)	50	EPDM Prx.
SP 45-DN50 45 (23) E	45	Rp 2" (Gas – M)	50	EPDM Prx.
SP 45-DN50 51 (26) E	51	Rp 2" (Gas – M)	50	EPDM Prx.
SP 45-DN50 61 (31) E	61	Rp 2" (Gas – M)	50	EPDM Prx.
SP 45-DN50 73 (37) E	73	Rp 2" (Gas – M)	50	EPDM Prx.

Heat exchanger





Foot kit (optional)



Ground plan view

Model	A [mm]	B [mm]	C [mm]	E [mm]	F [mm]	G [mm]	H [mm]	I [mm]	D [mm]	Weight [kg]
SP 35-DN50 21 (21) N	678	310	88	420	140	380	–	170	330	79
SP 35-DN50 27 (27) N	678	310	88	420	140	380	–	170	330	82
SP 35-DN50 33 (33) N	678	310	88	420	140	380	–	170	330	84
SP 35-DN50 41 (41) N	678	310	88	420	140	380	–	170	330	88
SP 35-DN50 49 (49) N	678	310	88	420	140	520	–	170	470	95
SP 35-DN50 53 (53) N	678	310	88	420	140	520	–	170	470	96
SP 35-DN50 61 (61) N	678	310	88	420	140	520	–	170	470	100
SP 35-DN50 71 (71) N	678	310	88	420	140	520	–	170	470	104
SP 35-DN50 81 (81) N	678	310	88	420	140	660	–	170	610	112
SP 35-DN50 89 (89) N	678	310	88	420	140	660	–	170	610	115
SP 35-DN50 101 (101) N	678	310	88	420	140	660	–	170	610	120
SP 35-DN50 117 (117) N	678	310	88	420	140	890	–	170	840	124
SP 45-DN50 21 (11) E	1008	310	88	750	140	380	–	170	330	120
SP 45-DN50 29 (15) E	1008	310	88	750	140	380	–	170	330	125
SP 45-DN50 33 (17) E	1008	310	88	750	140	380	–	170	330	128
SP 45-DN50 39 (20) E	1008	310	88	750	140	380	–	170	330	132
SP 45-DN50 45 (23) E	1008	310	88	750	140	380	–	170	470	141
SP 45-DN50 51 (26) E	1008	310	88	750	140	380	–	170	470	145
SP 45-DN50 61 (31) E	1008	310	88	750	140	380	–	170	470	152
SP 45-DN50 73 (37) E	1008	310	88	750	140	380	–	170	610	164

NOTE: To derive the total footprint, add the corresponding connection dimension (C) to the dimension (D).

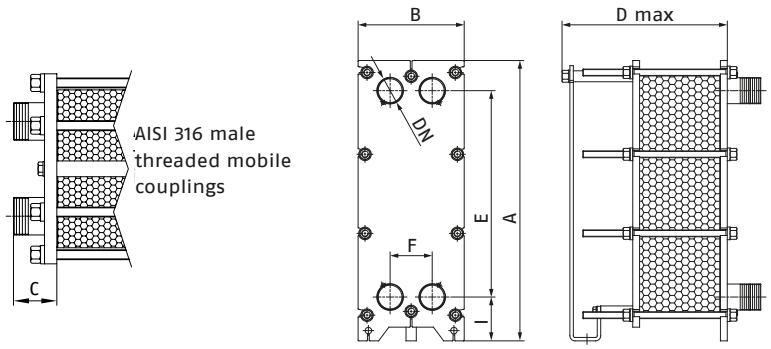
COMPLEMENTARY ITEMS

Heat exchangers

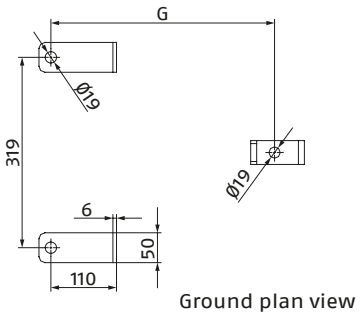
SP 40 - DN65 models
SP 50 - DN65 models

Model	N. Plates	DN	Mix (%)	Gasket
SP 40-DN65 17 (17) N	17	Rp 2" 1/2 (Gas - M)	100	NBR
SP 40-DN65 21 (21) N	21	Rp 2" 1/2 (Gas - M)	100	NBR
SP 40-DN65 25 (25) N	25	Rp 2" 1/2 (Gas - M)	100	NBR
SP 40-DN65 33 (33) N	33	Rp 2" 1/2 (Gas - M)	100	NBR
SP 40-DN65 41 (41) N	41	Rp 2" 1/2 (Gas - M)	100	NBR
SP 50-DN65 35 (14) N	35	Rp 2" 1/2 (Gas - M)	100	NBR
SP 50-DN65 41 (17) N	41	Rp 2" 1/2 (Gas - M)	40	NBR
SP 50-DN65 45 (18) N	45	Rp 2" 1/2 (Gas - M)	40	NBR
SP 50-DN65 51 (21) N	51	Rp 2" 1/2 (Gas - M)	40	NBR
SP 50-DN65 55 (22) N	55	Rp 2" 1/2 (Gas - M)	40	NBR
SP 50-DN65 61 (25) N	61	Rp 2" 1/2 (Gas - M)	40	NBR
SP 50-DN65 65 (26) N	65	Rp 2" 1/2 (Gas - M)	40	NBR
SP 50-DN65 69 (52) E	69	Rp 2" 1/2 (Gas - M)	75	NBR
SP 50-DN65 71 (29) N	71	Rp 2" 1/2 (Gas - M)	40	NBR
SP 50-DN65 79 (32) N	79	Rp 2" 1/2 (Gas - M)	40	NBR
SP 50-DN65 87 (66) E	87	Rp 2" 1/2 (Gas - M)	75	NBR
SP 50-DN65 101 (76) E	101	Rp 2" 1/2 (Gas - M)	75	NBR

Heat exchanger



Foot kit (optional)



Ground plan view

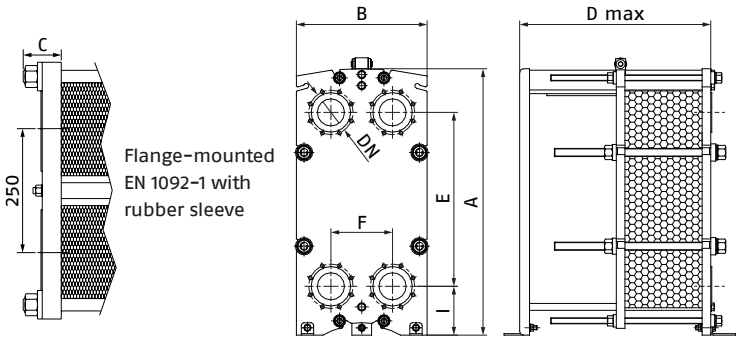
Model	A [mm]	B [mm]	C [mm]	E [mm]	F [mm]	G [mm]	H [mm]	I [mm]	D [mm]	Weight [kg]
SP 40-DN65 17 (17) N	729	385	88	456	192	385	-	171	355	102
SP 40-DN65 21 (21) N	729	385	88	456	192	385	-	171	355	105
SP 40-DN65 25 (25) N	729	385	88	456	192	385	-	171	355	107
SP 40-DN65 33 (33) N	729	385	88	456	192	385	-	171	355	112
SP 40-DN65 41 (41) N	729	385	88	456	192	385	-	171	355	116
SP 50-DN65 35 (14) N	992	385	88	720	192	385	-	171	355	184
SP 50-DN65 41 (17) N	992	385	88	720	192	385	-	171	355	189
SP 50-DN65 45 (18) N	992	385	88	720	192	525	-	171	495	197
SP 50-DN65 51 (21) N	992	385	88	720	192	525	-	171	495	202
SP 50-DN65 55 (22) N	992	385	88	720	192	525	-	171	495	206
SP 50-DN65 61 (25) N	992	385	88	720	192	525	-	171	495	211
SP 50-DN65 65 (26) N	992	385	88	720	192	525	-	171	495	214
SP 50-DN65 69 (52) E	992	385	88	720	192	525	-	171	495	218
SP 50-DN65 71 (29) N	992	385	88	720	192	525	-	171	495	219
SP 50-DN65 79 (32) N	992	385	88	720	192	665	-	171	635	231
SP 50-DN65 87 (66) E	992	385	88	720	192	665	-	171	635	238
SP 50-DN65 101 (76) E	992	385	88	720	192	665	-	171	635	250

NOTE: To derive the total footprint, add the corresponding connection dimension (C) to the dimension (D).

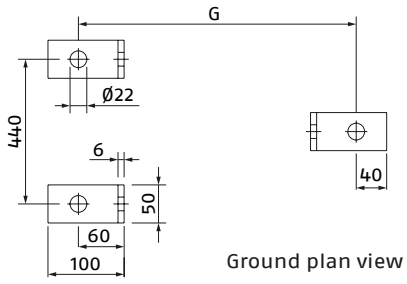
SP 60 - DN100 models

Model	N. Plates	DN	Mix (%)	Gasket
SP 60-DN100 87 (87) E	87	DN100 - PN 16	100	EPDM Prx.
SP 60-DN100 101 (101) E	101	DN100 - PN 16	100	EPDM Prx.
SP 60-DN100 115 (115) E	115	DN100 - PN 16	100	EPDM Prx.
SP 60-DN100 129 (129) E	129	DN100 - PN 16	100	EPDM Prx.
SP 60-DN100 41 (33) N	41	DN100 - PN 16	80	NBR
SP 60-DN100 45 (36) N	45	DN100 - PN 16	80	NBR
SP 60-DN100 51 (41) N	51	DN100 - PN 16	80	NBR
SP 60-DN100 61 (49) N	61	DN100 - PN 16	80	NBR
SP 60-DN100 67 (54) N	67	DN100 - PN 16	80	NBR
SP 60-DN100 77 (62) N	77	DN100 - PN 16	80	NBR
SP 60-DN100 87 (70) N	87	DN100 - PN 16	80	NBR
SP 60-DN100 97 (78) N	97	DN100 - PN 16	80	NBR
SP 60-DN100 109 (88) N	109	DN100 - PN 16	80	NBR
SP 60-DN100 119 (96) N	119	DN100 - PN 16	80	NBR
SP 60-DN100 139 (112) N	139	DN100 - PN 16	80	NBR
SP 60-DN100 169 (136) N	169	DN100 - PN 16	80	NBR
SP 60-DN100 201 (161) N	201	DN100 - PN 16	80	NBR

Heat exchanger



Foot kit (optional)

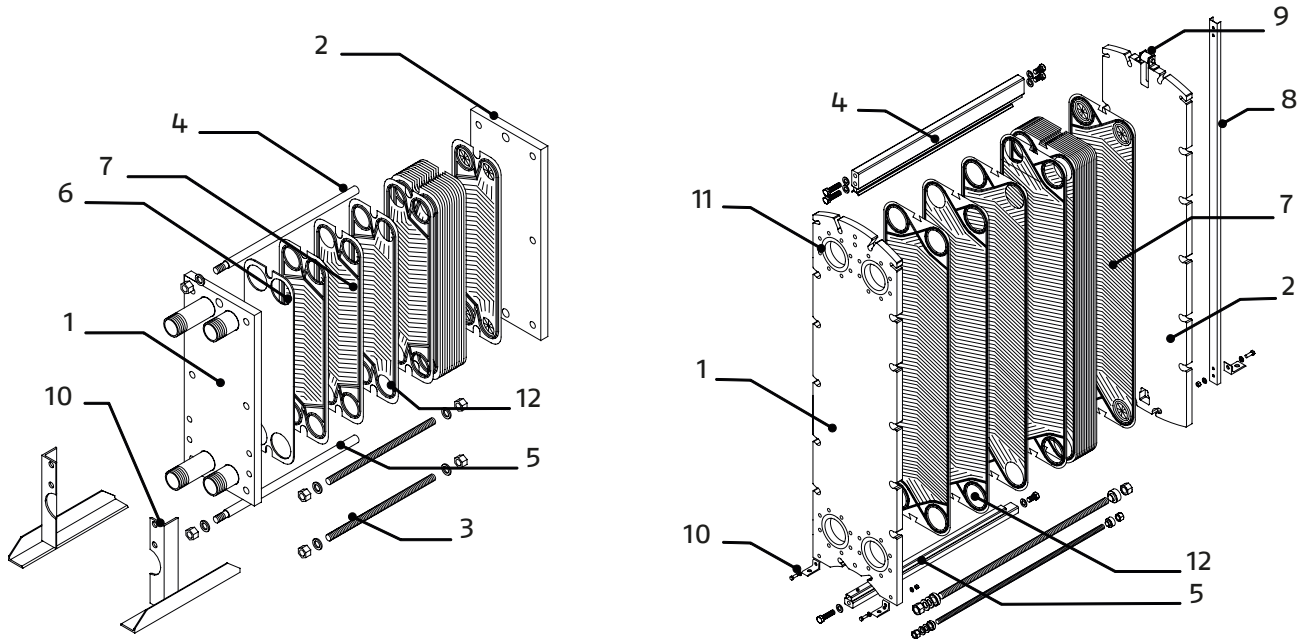


Ground plan view

Model	A [mm]	B [mm]	C [mm]	E [mm]	F [mm]	G [mm]	H [mm]	I [mm]	D [mm]	Weight [kg]
SP 60-DN100 87 (87) E	1124	530	48	705	250	853	-	198	790	376
SP 60-DN100 101 (101) E	1124	530	48	705	250	853	-	198	790	392
SP 60-DN100 115 (115) E	1124	530	48	705	250	1353	-	198	1290	431
SP 60-DN100 129 (129) E	1124	530	48	705	250	1353	-	198	1290	447
SP 60-DN100 41 (33) N	1124	530	48	705	250	853	-	198	790	324
SP 60-DN100 45 (36) N	1124	530	48	705	250	853	-	198	790	328
SP 60-DN100 51 (41) N	1124	530	48	705	250	853	-	198	790	335
SP 60-DN100 61 (49) N	1124	530	48	705	250	853	-	198	790	347
SP 60-DN100 67 (54) N	1124	530	48	705	250	853	-	198	790	354
SP 60-DN100 77 (62) N	1124	530	48	705	250	853	-	198	790	365
SP 60-DN100 87 (70) N	1124	530	48	705	250	853	-	198	790	377
SP 60-DN100 97 (78) N	1124	530	48	705	250	853	-	198	790	388
SP 60-DN100 109 (88) N	1124	530	48	705	250	1353	-	198	1290	426
SP 60-DN100 119 (96) N	1124	530	48	705	250	1353	-	198	1290	437
SP 60-DN100 139 (112) N	1124	530	48	705	250	1353	-	198	1290	460
SP 60-DN100 169 (136) N	1124	530	48	705	250	1353	-	198	1290	495
SP 60-DN100 201 (161) N	1124	530	48	705	250	1353	-	198	1290	532

NOTE: To derive the total footprint, add the corresponding connection dimension (C) to the dimension (D).

STRUCTURE



1. **Fixed plate**
2. **Movable plate**
3. **Rods**
4. **Guide/support bar**
5. **Lower plate guide**
6. **Aluminum thickness**
7. **Plates + gaskets**
8. **Column**
9. **Roller**
10. **Anchor angles (feets)**
11. **Hoses**
12. **Manifold**

HYDRAULIC CONNECTIONS

To connect the piping to the exchanger, follow the directions on the label showing the circuit diagram. In the case of movable connections, it is recommended to block the nozzle with a parrot wrench in order to avoid damage to the initial gasket.

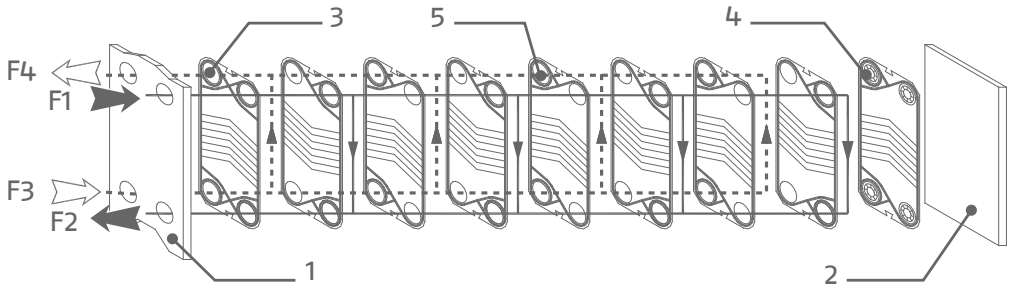
Before connecting the exchanger to the system, check the correct plate pack tightening dimension shown on the label, and reset it if necessary by following the instructions given on page 3.
In case of connections on the movable plate (circuits in series), useful space must be provided to allow longitudinal movement of the plate pack for replacement of worn gaskets or addition of plates: appropriate compensators must be arranged to avoid additional stresses on the exchanger components.
Absolutely avoid letting the weight of the piping bear down on the nozzles; fluid leaks can occur if they are subjected to loads, movement or vibration.
For the DN 100 range, the flanged connection to the system must ensure the sealing of the rubber sleeve interposed between the fixed front plate and flat flange with a gap of 2 mm.
Never place permanent piping in the space between the movable plate and the back support, this would prevent the exchanger from opening. In the case of series circuits, provide removable bends for the piping connected to the movable plate.
Provision should also be made:

- fill and drain valves to allow the exchanger to be opened without disturbing other elements of the system and to avoid fluid residue in the exchanger when it is not in operation, particularly this expedient is advisable in the case of corrosive fluids;
- vent valves on the load pipes inserted at the highest point in order to purge the internal circuits of the exchanger of air at first start-up.

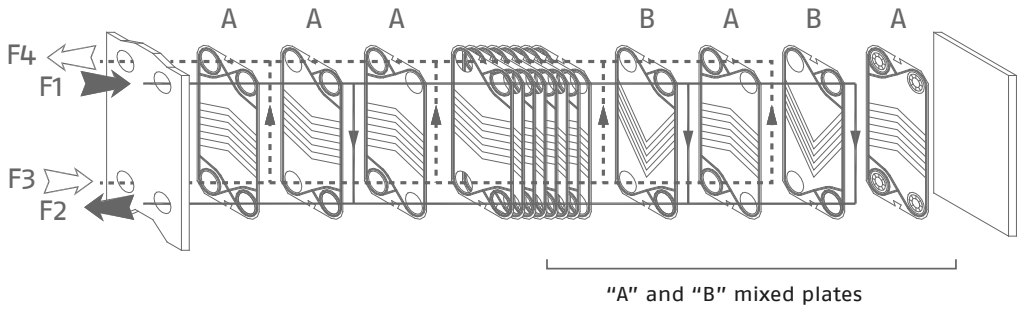
Check the inside of the piping for impurities such as sand, welding residue or other solid debris that could damage the plates and gaskets; if there are solid particles in the piping, filters should be provided so as not to affect the efficiency of the exchanger.

PLATE ASSEMBLY DIAGRAMS

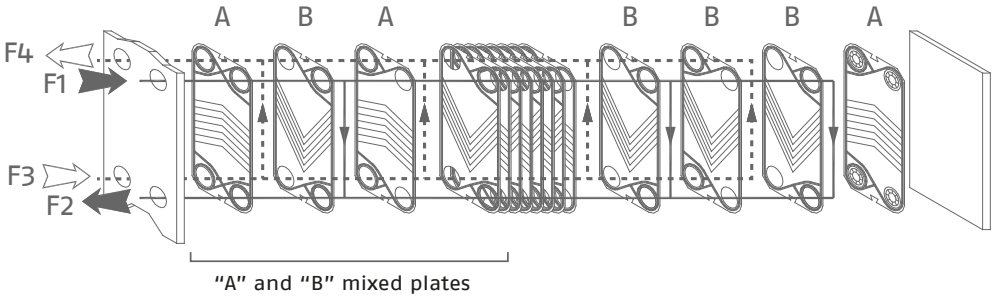
Single-pass circuit (1-1)



Mixed plate pack - High efficiency plate > 50%



Mixed plate pack - High efficiency plate > 50%



Key:

1. Fixed plate
2. Movable plate
3. Starting plate
4. Final plate
5. Intermediate plates
6. Diverter plate

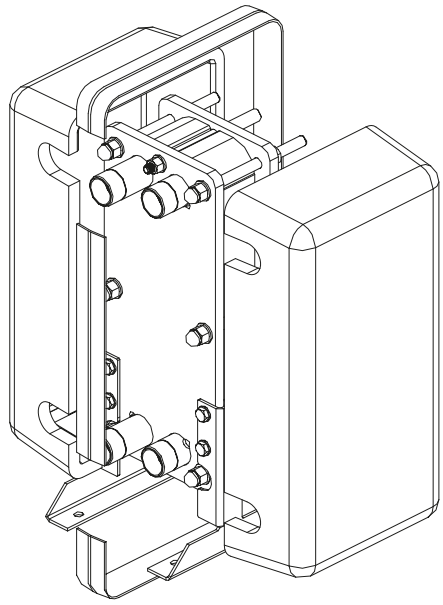
F1 Primary Flow
F2 Primary Return
F3 Secondary Return
F4 Secondary Flow

TYPE INSULATION KIT FROM C1 TO C16

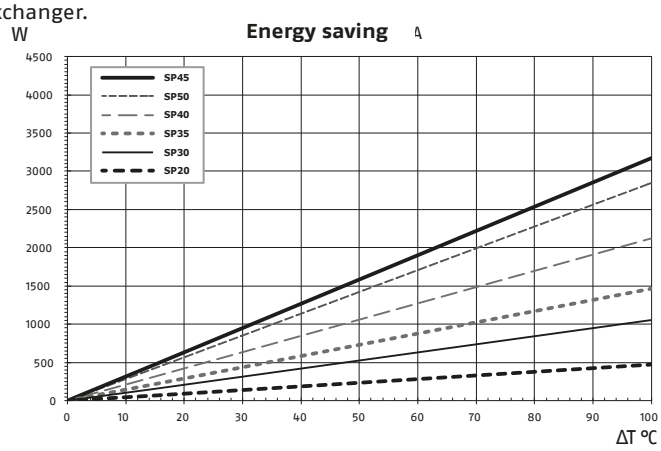
The insulation developed specifically for HVAC applications of our inspectable plate heat exchangers.
The insulation is prefabricated, flexible and semi-rigid, easy to install and adapt to any product configuration and customer-specific needs.
Due to its special "double-layer" structure, consisting of two different with two different closed-cell expanded elastomers (total thickness up to 30 mm), it is suitable for both heating and refrigeration applications.
Supplied as a kit, it can be assembled easily and quickly without the need for special tools (just an ordinary cutter) by following the detailed instructions provided and the pre-scoring on each half-shell.
The exchanger is completely contained within the insulation thus minimizing heat loss and condensation, and also ensuring a high degree of safety and comfort for the operators working around the exchanger.

- Exterior finish: semi-rigid high-density foam in dark gray.
- Insulation materials: closed-cell cross-linked polyolefin (PO) foam with a density of 84$^{kg/m3}$ (outer layer) and closed-cell cross-linked polyolefin (PO) foam with a density of 35$^{kg/m3}$ (inner layer).
- Thermal conductivity of insulation material 0.0376 W/mK (average value at 40°C).
- Material fire resistance: complies with FMVSS 302 flame containment standard (< 100 mm / min).
- Temperatures of use : -10°C to +130°C.

INSULATION KIT FOR MODELS
SP 20-30-35-40-45-50 (type C1 to C16)

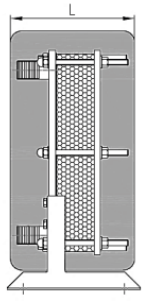


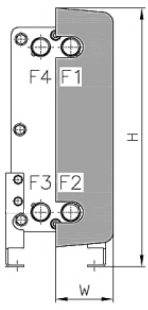
The diagram illustrates some examples of the reduction in heat flow to the environment potentially achievable with an insulated heat exchanger.



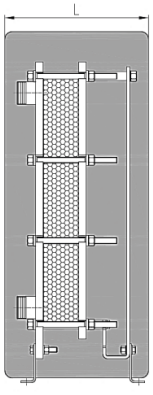
Δt°C = Difference between the average temperature inside the exchanger and the ambient.
W = Reduction of heat flow to the room as a function of the number of plates installed.
Example
SP45 model (all curves refer to the maximum number of plates)
Side 1 = Water 90°C->70°C
Side 2 = Water 60°C->80°C
Average temperature inside the exchanger (90 + 70 + 60 + 80) / 4 = 75°C
Room temperature 10°C
Δt = 75 - 10 = 65°C
The reduction of heat flow to the room will be about 2 kW.
Note: The result was estimated empirically and is highly dependent on actual operating conditions and accuracy of assembly

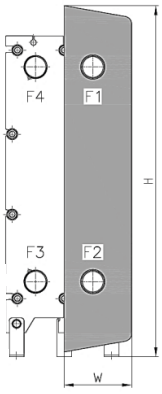
SP 20-30





SP 35-40-45-50





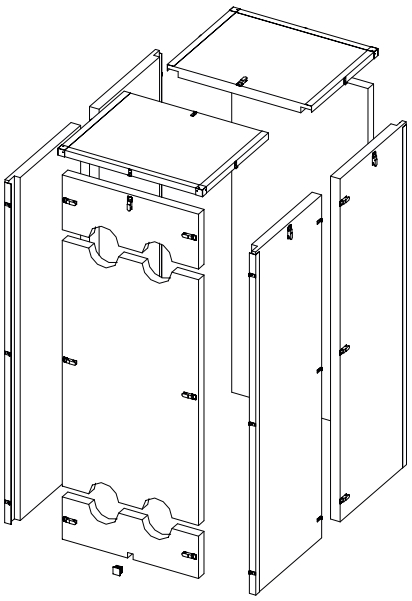
Model	Max plates	L (mm)	H (mm)	W (mm)
SP20 - DN32	29	280	595	130
SP20 - DN32	49	280	595	130
SP30 - DN32	29	280	865	130
SP30 - DN32	49	380	865	130
SP30 - DN32	75	580	865	130
SP35 - DN50	41	472	865	130
SP35 - DN50	71	612	865	130
SP35 - DN50	101	752	865	130
SP35 - DN50	151	982	865	130
SP45 - DN50	41	472	865	130
SP45 - DN50	71	612	865	130
SP45 - DN50	101	752	865	130
SP40 - DN65	41	490	900	233
SP50 - DN65	41	490	1160	233
SP50 - DN65	71	630	1160	233
SP50 - DN65	101	770	1160	233

INSULATION KIT TYPE C17 AND C18

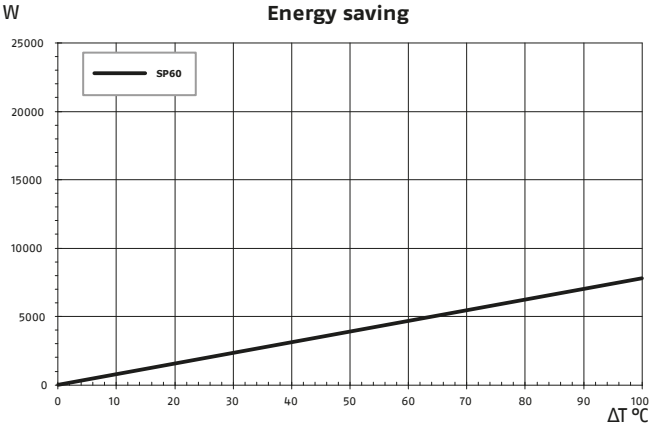
The insulation is specially designed for HVAC applications of our inspectable plate heat exchangers.
It is a self-supporting modular structure made of insulating panels (45 mm thick) anchored to each other by closing hooks and coupled in such a way as to minimize thermal bridges.
The special sandwich structure of the insulating panels, obtained by coupling the polyurethane foam with aluminum sheets, ensures that the assembly has a high degree of thermal insulation, good structural rigidity and an adequate surface finish.
Supplied in kit form, it is easily and quickly assembled without the use of special tools.
Exchanger completely contained within the insulation: minimized heat loss and condensation, high degree of safety and comfort for those working around the exchanger.

- Quick and easy access to the exchanger for possible inspections.
- External finish of the panels: RAL 2306 pre-painted smooth aluminum sheet (0.5 mm thick).
- Insulation material: rigid polyurethane foam with a high percentage of closed cells (greater than 95%) with a density of 48$^{kg/m3}$.
- Initial thermal conductivity of insulation material 0.024 W/m °C (value measured at the average temperature of 10°C according to ISO 8302).
- Fire resistance classification of the insulation material: B - 2s, d0 (according to UNI EN 13501-1:2007).
- Temperatures of use: -10°C to +130°C.

INSULATION KIT FOR MODELS
SP 60 (type C17 and C18)

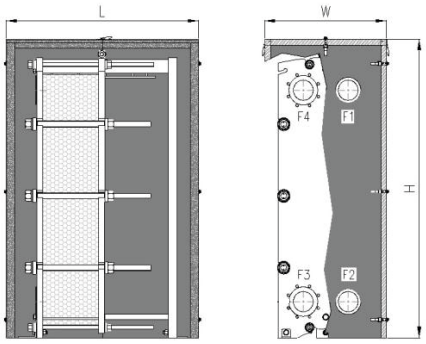


The diagram illustrates some examples of the reduction in heat flow to the environment potentially achievable with an insulated heat exchanger.



Δt°C = Difference between the average temperature inside the exchanger and the ambient.
W = Reduction of heat flow to the room as a function of the number of plates installed.
Example
SP60 model (all curves refer to the max number of plates)
Side 1 = Water 90°C->70°C
Side 2 = Water 60°C->80°C
Average temperature inside the exchanger (90 + 70 + 60 + 80) / 4 = 75°C
Room temperature 10°C
Δt = 75 - 10 = 65°C
The reduction of heat flow to the room will be about 5 kW.
Note: The result was estimated empirically and is highly dependent on actual operating conditions and accuracy of assembly

SP 60



Model	Max plates	L (mm)	H (mm)	W (mm)
SP60 - DN100	101	1074	1180	678
SP60 - DN100	201	1574	1180	678

SPECIFICATION DESCRIPTION

Construction description for synthetic specification
Range of inspectable plate heat exchangers made of AISI 316 L steel with painted carbon steel frame. The range is available with DN32 (SP20 and SP30), DN50 (SP35 and SP45), DN65 (SP40 and SP50) and DN 100 (SP60) hydraulic connections and dedicated to heating/cooling systems, industrial processes, DHW production, solar systems and swimming pool heating with chlorine disinfection.

Construction description for specification
The RIELLO HEATgate range of inspectable plate heat exchangers features:
- Plates made of AISI 316L steel with 0.4 mm thickness and strong anti-deformation structure during maintenance, available in two versions (depending on the model):
  - Type "A": "high efficiency" plates (open corrugation angle) characterized by higher turbulence (water advance is more hindered due to the corrugation angle) resulting in higher heat transfer and higher pressure drop.
  - Type "B": low pressure drop plates (closed corrugation angle) characterized by lower turbulence (water advance is easier due to the corrugation angle) resulting in lower heat transfer and lower pressure drop
- Robust, interchangeable seals available in two versions (depending on model):
  - NBR ("N" letter, at the end of the name): range of use: -20°C ÷ +110°C, good resistance to mineral oils and greases, good resistance to water and radiator fluid, good resistance to tearing and abrasion, good flexibility. Poor resistance to ozone, weathering, direct sunlight. Not resistant to glycol-based fluids (> +60°C), poor resistance to polar fluids (ketones, ethers, esters) chlorinated hydrocarbons, aromatic solvents
  - EPDM Prx (letter "E" at the end of the name): application range: -20°C ÷ +160°C, resistant to aging and weathering, non-mineral oils, wing temperature glycols (> +60°C) and water. Poor resistance to mineral oils and greases
- Sturdy carbon steel frame painted RAL 7024 equipped with tie rods and plate guides
- AISI 316L hydraulic connections available in various versions (depending on the exchanger model):
  - SP 20: threaded connection 1" ¼ M (DN32)
  - SP 30: threaded connection 1" ¼ M (DN32)
  - SP 35: threaded connection 2" M (DN50)
  - SP 40: threaded connection 2" ½ M (DN65)
  - SP 45: threaded connection 2" M (DN50)
  - SP 50: threaded connection 2" ½ M (DN65)
  - SP 60: flanged connection DN100 PN16
- Maximum operating pressure 10 bar
- Compliance with PED Directive 2014/68/EU (formerly 97/23/EC)

RIELLO HEATgate inspectable plate heat exchangers are recommended for:
- Boiler on high temperature systems
- Condensing boiler on low-temperature systems
- Solar thermal on swimming pool (chlorine disinfection)
- Solar thermal on storage
- Groundwater heat pump
- Heat pump on system
- Instantaneous DHW production
- Biomass on storage
- Industrial processes (check with engineering department).

MATERIAL SUPPLIED AS STANDARD

Operation and maintenance manual

SYSTEM ACCESSORIES

Recommended accessories available in the catalog:

- Insulation and protection kit: this is an accessory to minimize thermal bridges characterized by a self-supporting modular structure made of thick insulation panels. The kit provides the assembly with a high degree of thermal insulation, good structural rigidity and an adequate surface finish. The main advantages are:
  - Easily and quickly assembled without the use of special tools
  - Exchanger completely contained within the insulation: minimized heat loss and condensation, high degree of safety and comfort for those working around the exchanger.
  - Low installation costs.
  - Quick and easy access to the exchanger for possible inspections
- Ground anchor foot kit: this is an accessory to facilitate the installation and stability of the plate heat exchanger

Recommended accessories (not in catalog - by Installer/Designer)

- Thermometer and pressure gauge at the inlet of each circuit
- Inlet and outlet valves to allow the exchanger to be opened without disturbing other elements of the system and to avoid fluid residue in the exchanger when it is not in operation, particularly this expedient is advisable in the case of corrosive fluids
- Vent valves on the load pipes inserted at the highest point in order to purge air from the circuits inside the exchanger at first startup
- Filters

12-MONTH WARRANTY

Assembled exchangers

The manufacturer guarantees the exchanger for the duration of 12 months from invoicing, if used in accordance with the thermal program agreed upon at the time of purchase. In this regard, the Customer must be able to demonstrate the inlet temperatures and pressures of the two circuits within the exchanger. For this purpose, the system must be equipped with the necessary instruments, i.e., there must be at least one thermometer and one pressure gauge at the inlet of each circuit.

All use and maintenance instructions given in this manual and complied with the design specifications agreed to at the time of ordering must also be followed.

Each product has a warranty seal around the plate package (the presence of the same is also highlighted in the packaging, in order to avoid errors), which if removed without the Manufacturer's authorization automatically causes the customer's protection to lapse.

The complaint of the defect must be made promptly and in writing. The manufacturer agrees to take immediate action to verify the actual defect in the product and to resolve it under warranty if attributable to it.

Notes

Notes

RIELLO

HEATgate

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Carrier