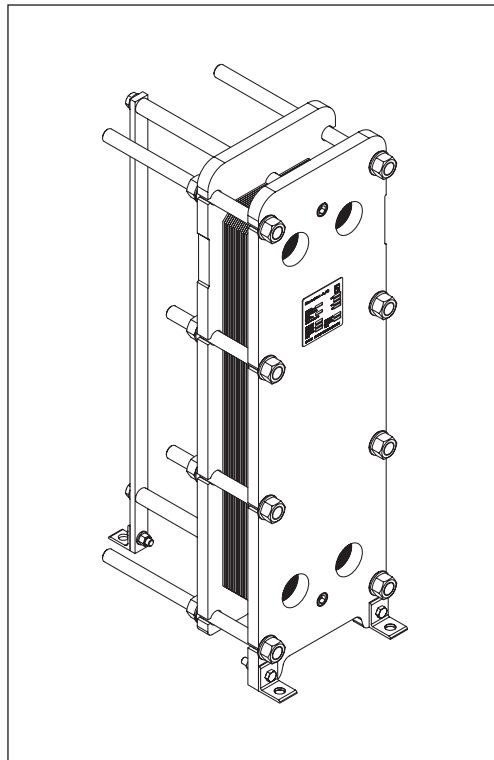


Data sheet

Gasketed Plate Heat Exchangers (DN 200 / 8")

S43 / S43AD / S65 / S100 / S100AD / S100TY / S130 / S131 / S152 / S221 / S229

Description



SONDEX® gasketed plate heat exchangers are the ideal choice for a wide range of applications across numerous market segments.

We have the largest plate portfolio in the world, and we customize each heat exchanger to meet your exact requirements. Innovative technologies and smart design make our gasketed plate heat exchangers a stellar investment.

Benefits:

- Individually customized solution that perfectly matches your requirements and lowers your energy consumption.
- High performance and a low pressure drop eliminate unnecessary burdens on your system and optimize overall system performance.
- The design results in a compact solution with a small footprint, simple installation, and easy access for maintenance.

Common applications:

- HVAC industry
- Marine/offshore industry
- Dairy/food/beverage industry
- Sugar industry
- Biogas industry
- Pulp and paper industry
- Heavy industry
- Mining industry
- Petrochemical industry
- Chemical industry DN 200

Main data:

- Min. temperature -10°C
- Max. temperature 180°C
- Max. working pressure 16 / 25 bar (6 / 10 bar on request)
- Water and different fluids, steam
- Connection size DN 200 or 8"

Approvals:

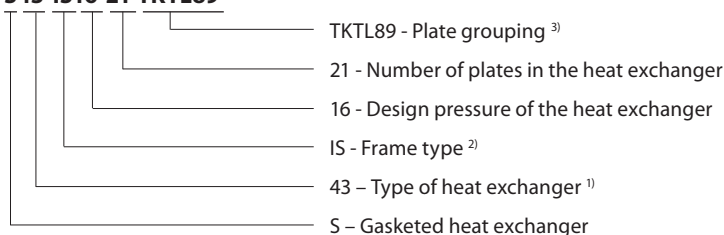
- Please contact your local Danfoss/SONDEX® sales representative for an overview of the available approvals in your region

Construction standard:

- EN13445 (PED 2014/68/EU)
- ASME sec VIII, Div. 1

Naming of units

S43-IS16-21-TKTL89



¹⁾ Type of heat exchanger:

43 - ...

Letter A shows type of the attachment of gasket to plate:

e.g. 43 (without A) – SonderLock

43A (with A) – Hang-on

AD - wider channel gap design

TY - asymmetric channel design

²⁾ Description of frame types:

There are few different frame types which can be offered for different applications and duties.

IS – with suspension roller,

IG – without suspension roller,

FS – food/sanitary with suspension roller,

FG - food/sanitary,

ST – simple design of frame with threaded connections

³⁾ Channel grouping:

In this example, the heat exchanger combines TK and TL channels. The share of TL channels equals 89% of the total number of channels.

The number of channels is defined as “the number of plates - 1”.

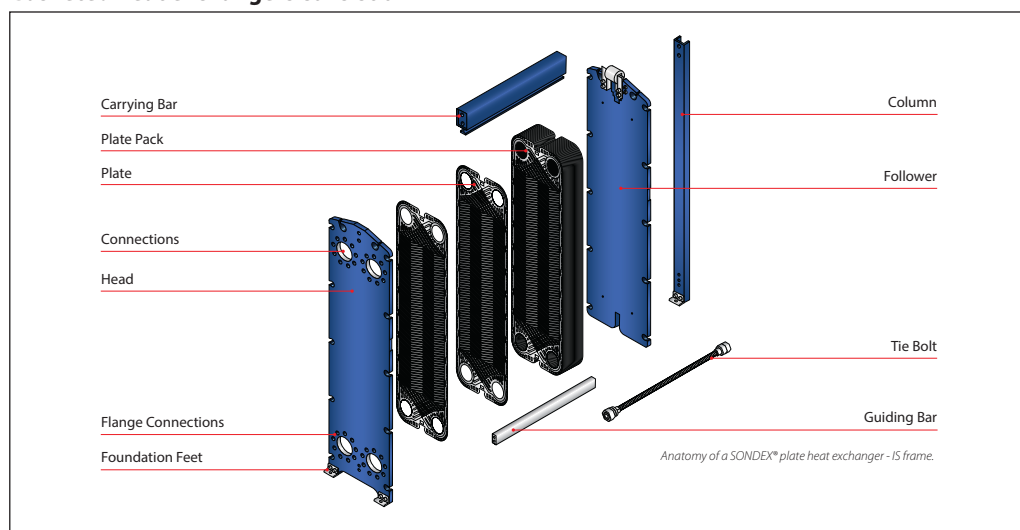
TK - short thermal length

TM - medium thermal length

TL - long thermal length

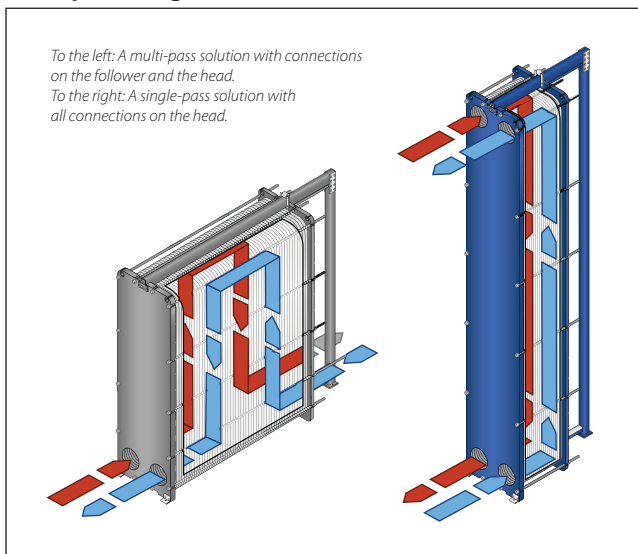
Heat exchanger design

Gasketed heat exchangers consist of



Heat exchanger design
(continued)

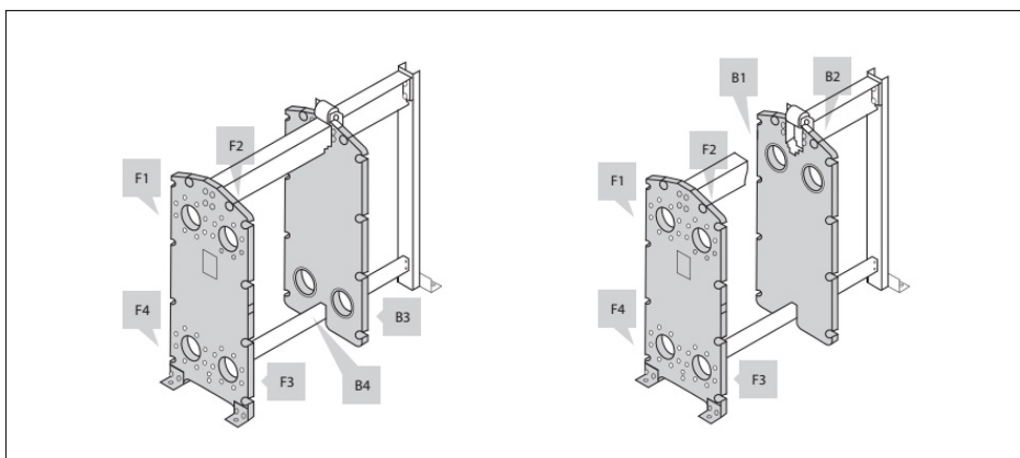
Multi-pass design



Connections

The heat exchanger may have connections on both front and back end sides of the unit.

Connections on the front-end plate are marked with F and connections on the back-end plate are marked with B. The numbers 1, 2, 3 and 4 designate the position of the connection on the end-plate from the top-left port clockwise.



Technical data

Heat exchanger S43 / S43AD / S65 / S100 / S100AD / S100TY / S130 / S131 / S152 / S221 / S229

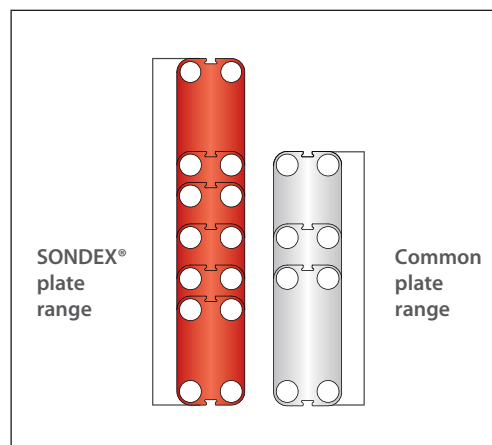
Type		S43	S43AD	S65	S100	S100AD	S100TY	S130	S131	S152	S221	S229
Max. working pressure	PN (bar)	(6) ¹⁾ , (10) ¹⁾ , 16, 25										
Max. operating temperature	°C	Up to 180										
Min. operating temperature		-10										
Flow medium		Water and different fluids, steam										
Volume / channel	l	1.3	2.6	1.7	2.38	4.23	2.92 / 1.84	3.4	8.6	4.03	5.9	11.0
Connection size		DN 200/ 8"										
Connection type		• DN 200/8" flanges. Carbon steel, rubberlined or clad with AISI 316L (other materials available on request)										
Plate material		Stainless steel EN 1.4404 (AISI 316L), EN 1.4301 (AISI 304), SMO254, Hastelloy C276, titanium Gr.1 Other materials available on request										
Plate thickness	mm	0.4; 0.5; 0.6; 0.7 ¹⁾ ; 0.8 ¹⁾ (ti) ¹⁾ 2 x 0.4 SonderSafe plates ²⁾ Other thicknesses available on request										
Gasket material		NBR, EPDM, FKM Certain gasket materials are not available for all frame sizes and/or variation										
Gasket attachment type		Hang-on; Sonder Lock										
Liners in connections		• Rubber NBR, EPDM, FKM • Stainless steel EN 1.4404 (AISI 316L), EN 1.4301 (AISI 304), SMO254, Hastelloy C276, titanium Gr.1										
Frame		• Painted frame, color RAL 5010 (other colors available on request) • Stainless steel frame, designed for the sanitary applications (e.g. food and dairy industries)										
Frame painting specification		Painting available for corrosion categories C2L, C4M, C5M										

¹⁾ Not available for all frame variations

²⁾ SonderSafe – double plate

Using the right plate for each individual duty is very important, as it greatly impacts the efficiency of the entire installation. It is important that the length of the plates and the type of pattern match the requirements of individual thermal duty. We have developed a wide plate portfolio to provide the perfect plate and connection size for any duty. No application is too small or too big for us - we provide the optimal technical solution every time.

Our extensive SONDEX® plate portfolio includes plates that lie outside the commonly manufactured plate sizes to cover all thermal duties optimally.



Accessories

Insulation

Recommended applications:

The insulation jacket for the plate heat exchanger is used in different applications with high temperatures and cooling systems.

Application	Heating	Cooling
Material	45 mm mineral wool Not flammable DIN EN 4102A2	40 mm PU-foam DIN 4102-1 B2
Outer cap	1 mm aluminium "Stucco" Embossed	
Internal insulation	0.05 mm aluminium foil	
Panel fixation	Plastic rivets	
Temperature	20 ... 200 °C	-50 ... -80 °C
U-value	0.55 W/m ² K	0.38 W/m ² K
Insulation class	3 ¹⁾	4 ¹⁾
Heat loss	17.1 W/m ²	-

Please note:

Inlet and outlet temperatures in the exchanger have been based on 90/50 – 30/70 °C.

¹⁾ *The loss of heating/cooling is stated per m² surface on the insulation jacket.*

The bottom of the heat exchanger is not insulated and this fact has been excluded.

A possible loss of ventilation, largely dependent on the mounting of the heat exchanger, has not been taken into account either.

Drip trays

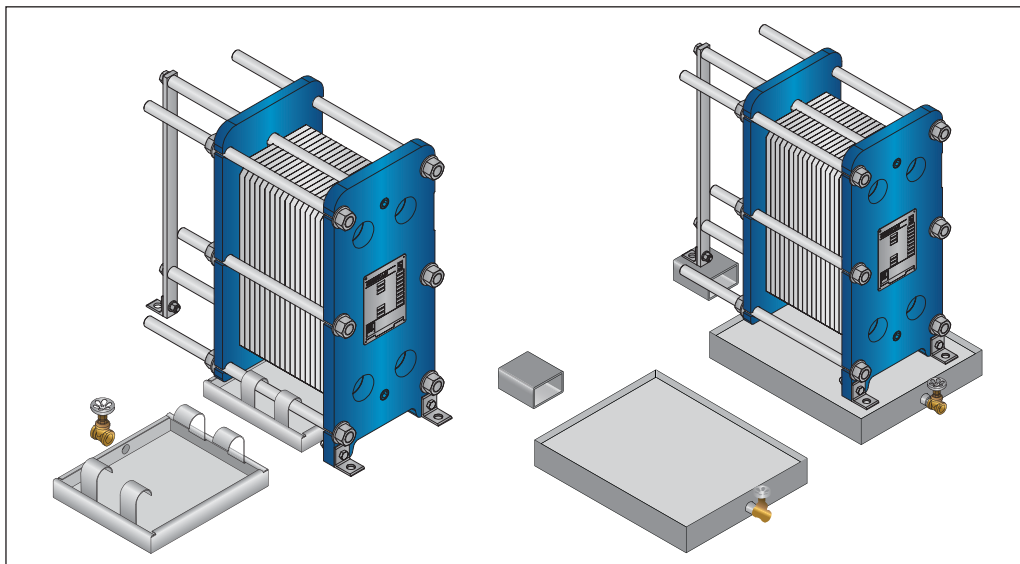
Recommended Applications:

The drip tray is available in two types. A "fail-safe" solution which prevents water or liquid from leaking onto the floor, or when the heat exchanger is dismantled, or opened for inspection and maintenance. And an insulated drip tray for cooling applications, which collects condensate formed outside of the plate heat exchanger.

Materials

Drip tray consists of:

- 1 mm galvanized steel frame
- Hanging brackets in galvanized steel
- 60 mm Polyurethane insulation for cooling applications
- Draining valve.



Spare parts

Spare parts for gasketed heat exchangers, such as plates, gaskets, frame parts can be ordered for maintenance, repair, increasing heat exchanger capacity, etc.

Please contact your local Danfoss or SONDEX® sales representative to provide you with information on spare parts available for gasketed heat exchangers.

Selection and ordering

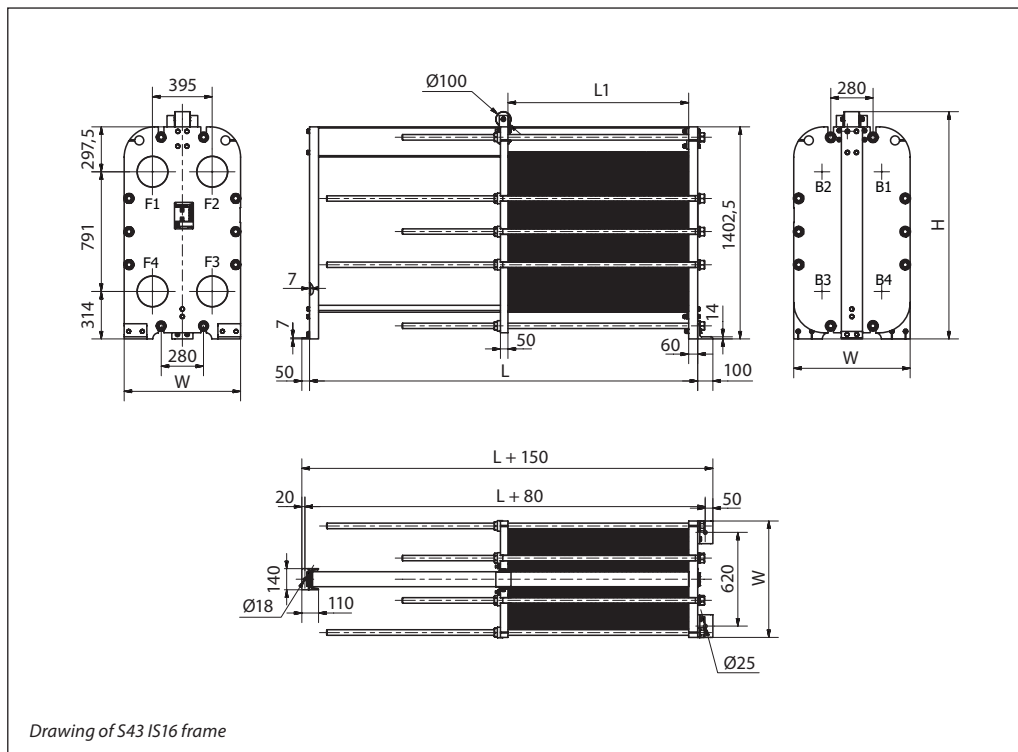
Please contact your local SONDEX® or Danfoss sales representative for the selection and / or ordering of the heat exchangers, spare parts, and accessories.

For contact information please visit <https://www.danfoss.com/en/contact-us>.

Dimensions
Non-sanitary applications

Any connection can be used for primary side in.
All the rest are made correspondingly.

S43 / S43AD frames



Drawing of S43 IS16 frame

Number of plates ¹⁾	L (frame length) (mm)	W (mm)	H (mm)	Weight max, empty ²⁾ (kg)	Connection type
S43 (S43AD) IS16					
7 – 64 (7 - 54)	667	770 (30.31")	1502.5 (59.15")	1161 (1276)	DN 200 flange or 8"
65 – 137 (55 - 116)	1067			1406 (1507)	
138 – 191 (117 - 162)	1367			1591 (1678)	
192 – 228 (163 - 193)	1567			1722 (1793)	
229 – 319 (194 - 270)	2067			2030 (2081)	
320 – 410 (271 - 346)	2567			2345 (2365)	
411 – 500 (347 - 423)	3067			2658 (2653)	
501 – 682 (424 - 577)	4067			3290 (3228)	
S43 IS25					
7 – 62	677	790 (31.10")	1502.5 (59.15")	1334	DN 200 flange or 8"
63 – 133	1077			1632	
134 – 187	1377			1857	
188 – 223	1577			2007	
224 – 312	2077			2379	
313 – 401	2577			2752	
402 – 491	3077			3128	
492 – 669	4077			3873	

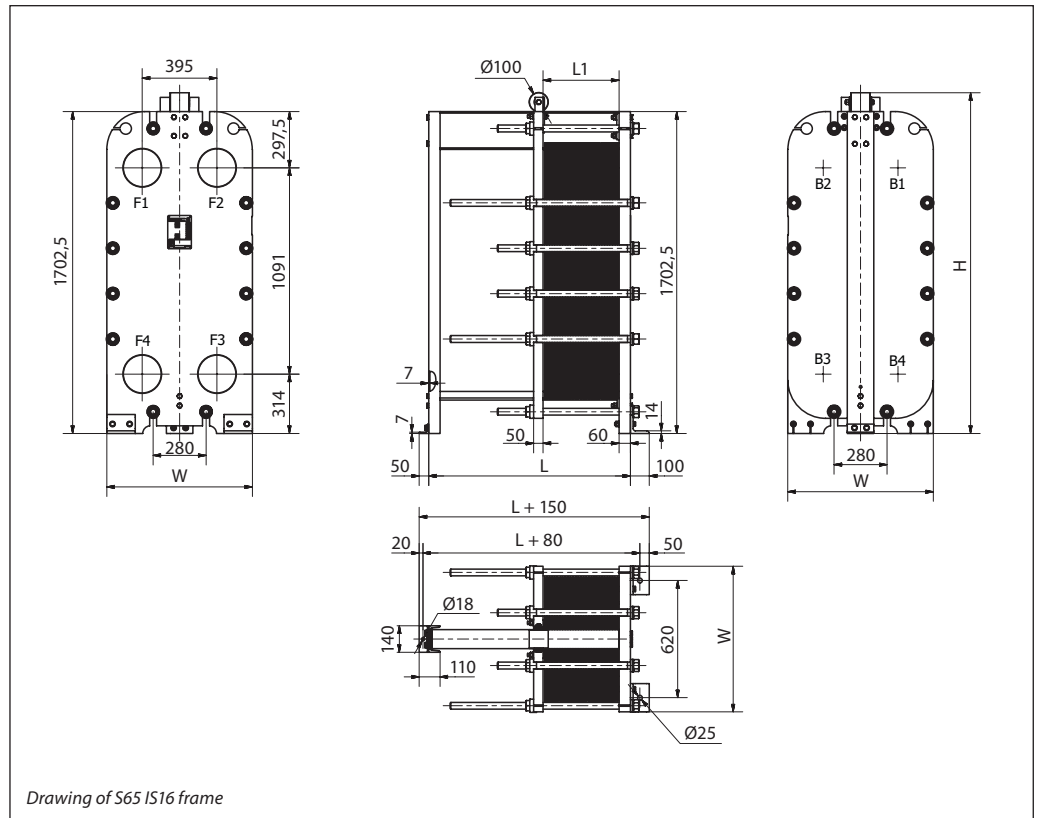
¹⁾ the indicated maximum number of plates is based on the minimum plate thickness allowable for the PN level of the unit;

²⁾ the maximum weight of the empty unit with the maximum allowable number of plates;

³⁾ PNclass 10 bar is available on request

Dimensions (continued)
Non-sanitary applications

S65 frames



Drawing of S65 IS16 frame

Number of plates ¹⁾	L (frame length) (mm)	W (mm)	H (mm)	Weight max, empty ²⁾ (kg)	Connection type
S65 IS16					
7 – 64	667	770 (30.31")	1802.5 (70.96")	1430	DN 200 flange or 8"
65 – 137	1067			1737	
138 – 191	1367			1971	
192 – 228	1567			2137	
229 – 319	2067			2523	
320 – 410	2567			2921	
411 – 500	3067			3316	
501 – 682	4067			4114	
S65 IS25					
7 – 61	677	790 (31.10")	1802.5 (70.96")	1690	DN 200 flange or 8"
62 – 133	1077			2050	
134 – 186	1377			2326	
187 – 222	1577			2521	
223 – 311	2077			2991	
312 – 400	2577			3443	
401 – 490	3077			3919	
491 – 668	4077			4862	

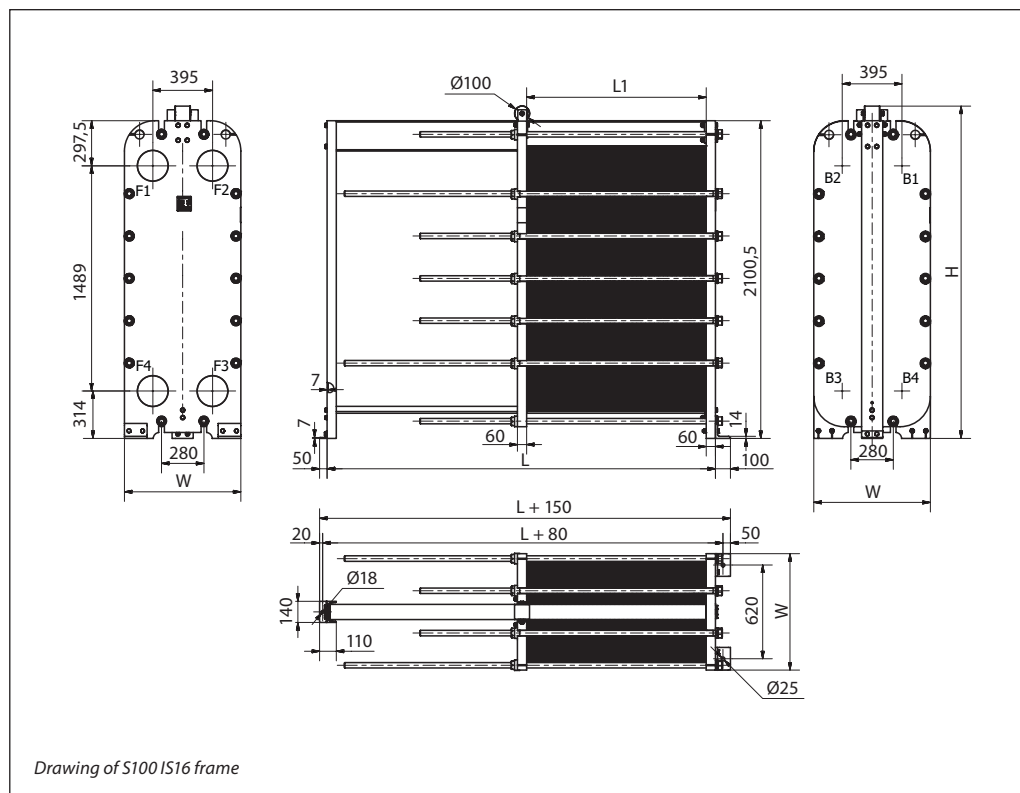
¹⁾ the indicated maximum number of plates is based on the minimum plate thickness allowable for the PN level of the unit;

²⁾ the maximum weight of the empty unit with the maximum allowable number of plates;

³⁾ PNclass 10 bar is available on request

Dimensions (continued)
Non-sanitary applications

S100 frames



Drawing of S100 IS16 frame

Number of plates ¹⁾	L (frame length) (mm)	W (mm)	H (mm)	Weight max, empty ²⁾ (kg)	Connection type
S100 IS16					
7 - 64	667	770 (30.31")	2198 (86.53")	1805	DN 200 Flange or 8"
65 - 137	1067			2194	
138 - 191	1367			2489	
192 - 228	1567			2689	
229 - 319	2067			3188	
320 - 410	2567			3692	
411 - 500	3067			4193	
501 - 682	4067	5204			
683 - 864	5210	790 (31.10")	2505.5 (98.64")	6214	
865 - 1046	6210			7267	
S100 IS25					
7 - 61	677	790 (31.10")	2200.5 (86.63")	2019	DN 200 Flange or 8"
62 - 133	1077			2505	
134 - 186	1377			2864	
187 - 222	1577			3108	
223 - 311	2077			3710	
312 - 400	2577			4312	
401 - 490	3077			4921	
491 - 668	4077	6125			
669 - 847	5220	790 (31.10")	2505.5 (98.64")	7686	
848 - 1025	6220			8944	

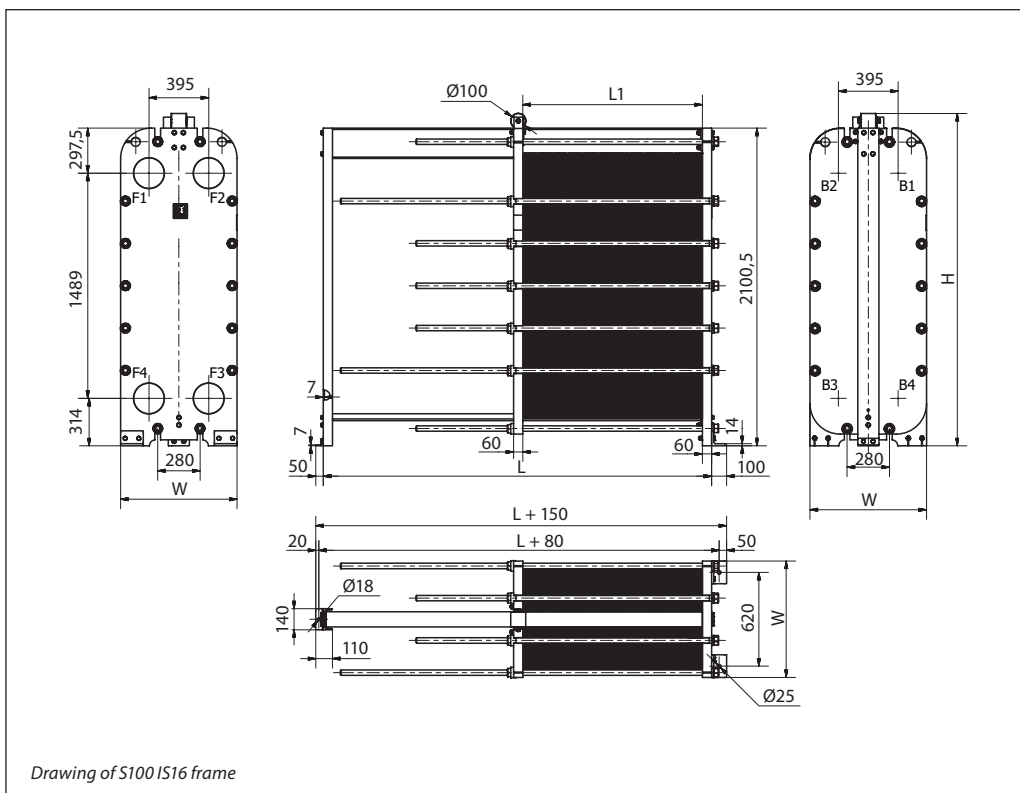
¹⁾ the indicated maximum number of plates is based on the minimum plate thickness allowable for the PN level of the unit;

²⁾ the maximum weight of the empty unit with the maximum allowable number of plates;

³⁾ PNclass 10 bar is available on request

Dimensions (continued)
Non-sanitary applications

S100AD / S100TY frames



Drawing of S100 IS16 frame

Number of plates ¹⁾	L (frame length) (mm)	W (mm)	H (mm)	Weight max, empty ²⁾ (kg)	Connection type
S100AD IS16					
7 – 64	667	790 (31.10")	2200.5 (86.64")	1935	DN 200 flange or 8"
55 – 119	1067			2327	
120 – 165	1367			2608	
166 – 196	1567			2798	
197 – 270	2067			3252	
271 – 350	2567			3737	
351 – 426	3067			4203	
427 – 580	4067			5143	
581 – 734	5210			6084	
735 – 888	6210			7023	
S100TY IS16					
7 – 64	667	770 (30.31")	2198 (86.53")	1977	DN 200 flange or 8"
65 – 140	1067			2415	
141 – 195	1367			2735	
196 – 231	1567			2945	
232 – 319	2067			3459	
320 – 413	2567			4003	
414 – 504	3067			4533	
505 – 686	4067			5591	
687 – 868	5210	790 (31.10")	2505.5 (98.64")	6650	DN 200 flange or 8"
869 – 1050	6210	7708			

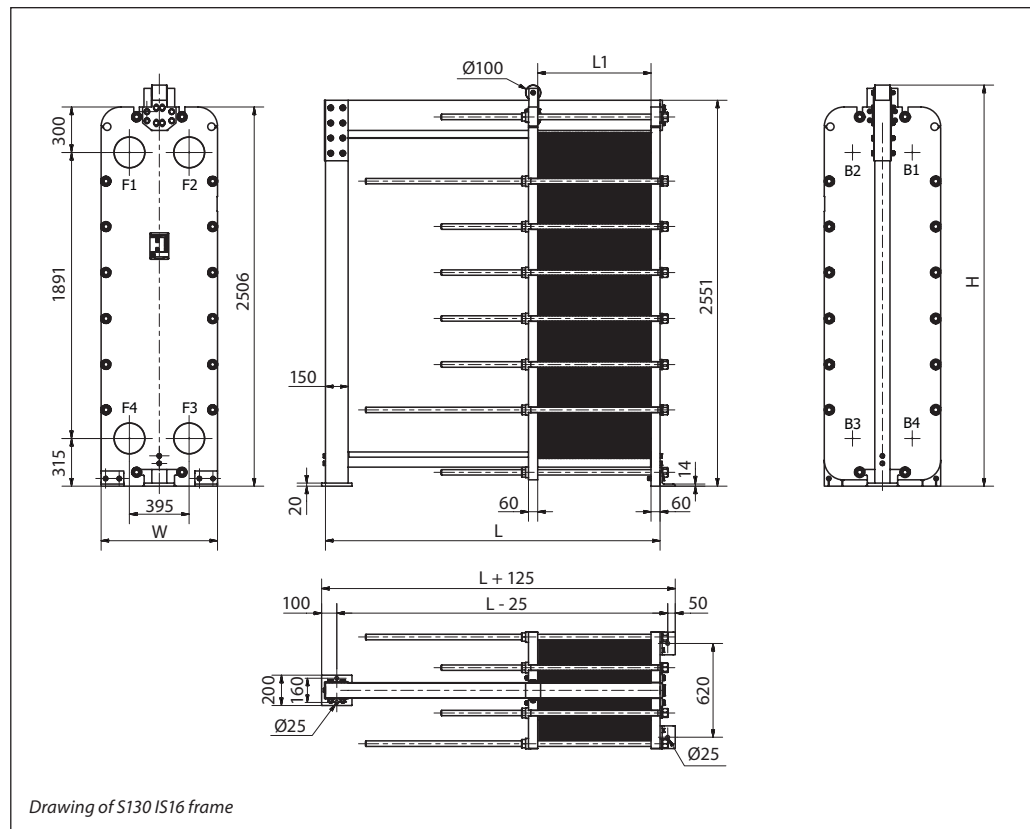
¹⁾ the indicated maximum number of plates is based on the minimum plate thickness allowable for the PN level of the unit;

²⁾ the maximum weight of the empty unit with the maximum allowable number of plates;

³⁾ PNclass 10 bar is available on request

Dimensions (continued)
Non-sanitary applications

S130 frames



Number of plates ¹⁾	L (frame length) (mm)	W (mm)	H (mm)	Weight max, empty ²⁾ (kg)	Connection type
S130 IS16					
7 - 64	810	770 (30.31")	2651 (104.37")	2497	DN 200 flange or 8"
65 - 140	1210			3043	
141 - 195	1510			3441	
196 - 231	1710			3703	
232 - 319	2210			4344	
320 - 413	2710			5022	
414 - 504	3210			5681	
505 - 686	4210			6854	
687 - 868	5210			2908 (114.49")	
869 - 1050	6210		9337		
S130 IS25					
7 - 61	825	790 (31.10")	2655 (104.53")	2276	DN 200 flange or 8"
62 - 133	1225			2737	
134 - 186	1525			3114	
187 - 222	1725			3309	
223 - 311	2225			3882	
312 - 400	2725			4464	
401 - 490	3225			5036	
491 - 668	4225			6191	
669 - 847	5225			2907 (114.45")	
848 - 1025	6225		8491		

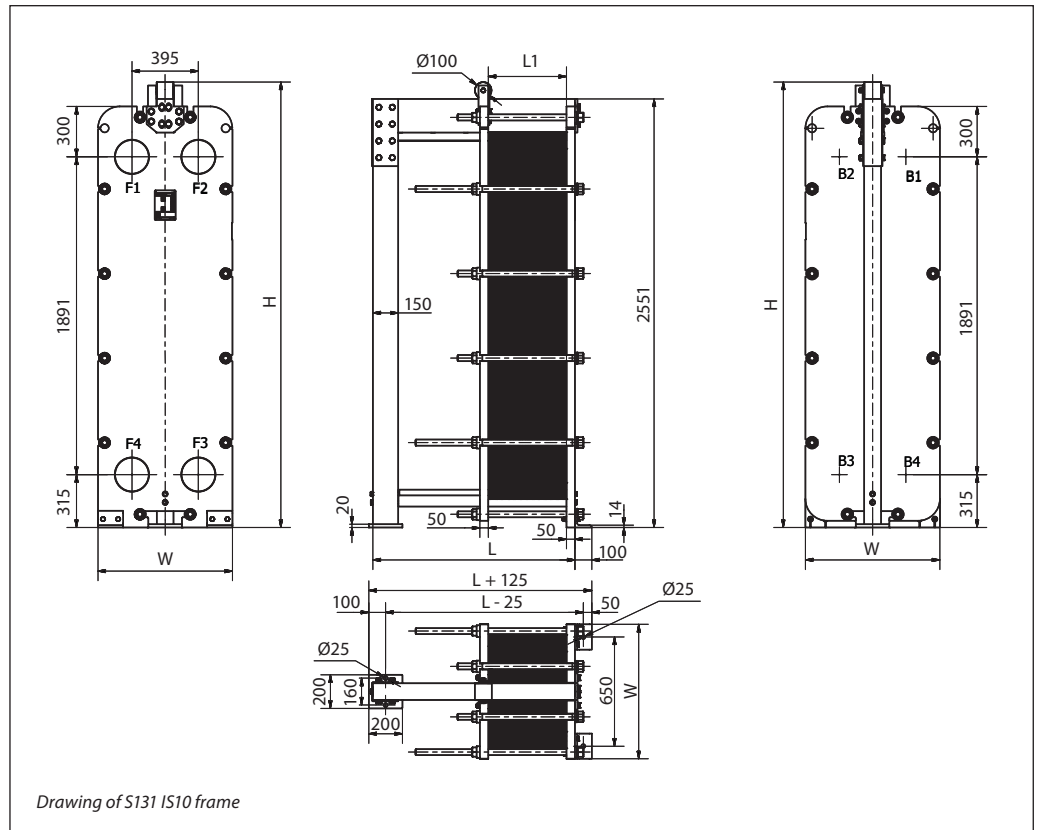
¹⁾ the indicated maximum number of plates is based on the minimum plate thickness allowable for the PN level of the unit;

²⁾ the maximum weight of the empty unit with the maximum allowable number of plates;

³⁾ PNclass 10 bar is available on request

Dimensions (continued)
Non-sanitary applications

S131 frames



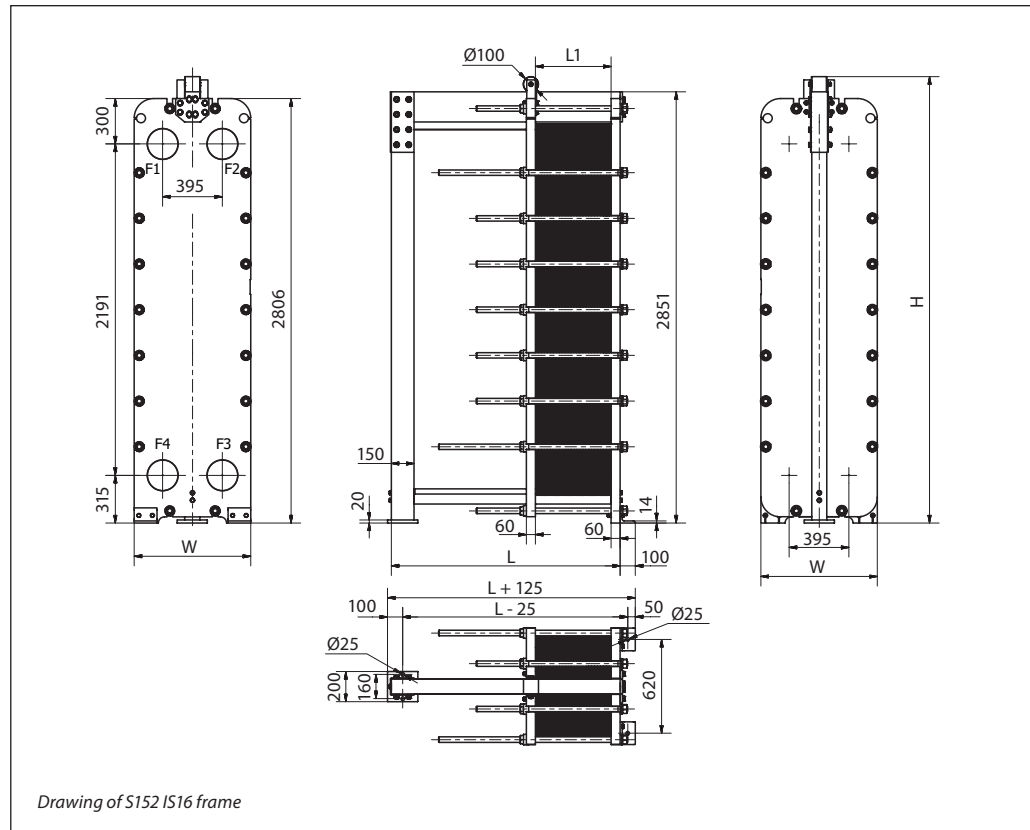
Number of plates ¹⁾	L (frame length) (mm)	W (mm)	H (mm)	Weight max, empty ²⁾ (kg)	Connection type
S131 IS10					
7 – 33	810	800 (31.50")	2651 (104.37")	2276	DN 200 flange or 8"
34 – 70	1210			2737	
71 – 98	1510			3114	
99 – 116	1710			3309	
117 – 162	2210			3882	
163 – 209	2710			4464	
210 – 255	3210			5036	
256 – 348	4210			6191	
349 – 440	5210			7336	
441 – 533	6210			8491	

¹⁾ the indicated maximum number of plates is based on the minimum plate thickness allowable for the PN level of the unit;

²⁾ the maximum weight of the empty unit with the maximum allowable number of plates;

Dimensions (continued)
Non-sanitary applications

S152 frames



Number of plates ¹⁾	L (frame length) (mm)	W (mm)	H (mm)	Weight max, empty ²⁾ (kg)	Connection type
S152 IS16					
7 – 64	810	770 (30.31")	2951 (116.18")	2804	DN 200 flange or 8"
65 – 137	1210			3402	
138 – 191	1510			3845	
192 – 228	1710			4147	
229 – 319	2210			4893	
320 – 410	2710			5637	
411 – 500	3210			6376	
501 – 682	4210			7866	
683 – 866	5225		3208 (126.30")	9370	
867 – 1048	6225		10861		
S152 IS25					
7 – 63	825	770 (30.31")	2950 (116.14")	3053	DN 200 flange or 8"
64 – 134	1225			3687	
135 – 188	1525			4194	
189 – 224	1725			4548	
225 – 313	2225			5356	
314 – 402	2725			6208	
403 – 491	3225			7138	
492 – 670	4225			8878	
671 – 850	5225		3208 (126.30")	10368	
851 – 1029	6225		12071		

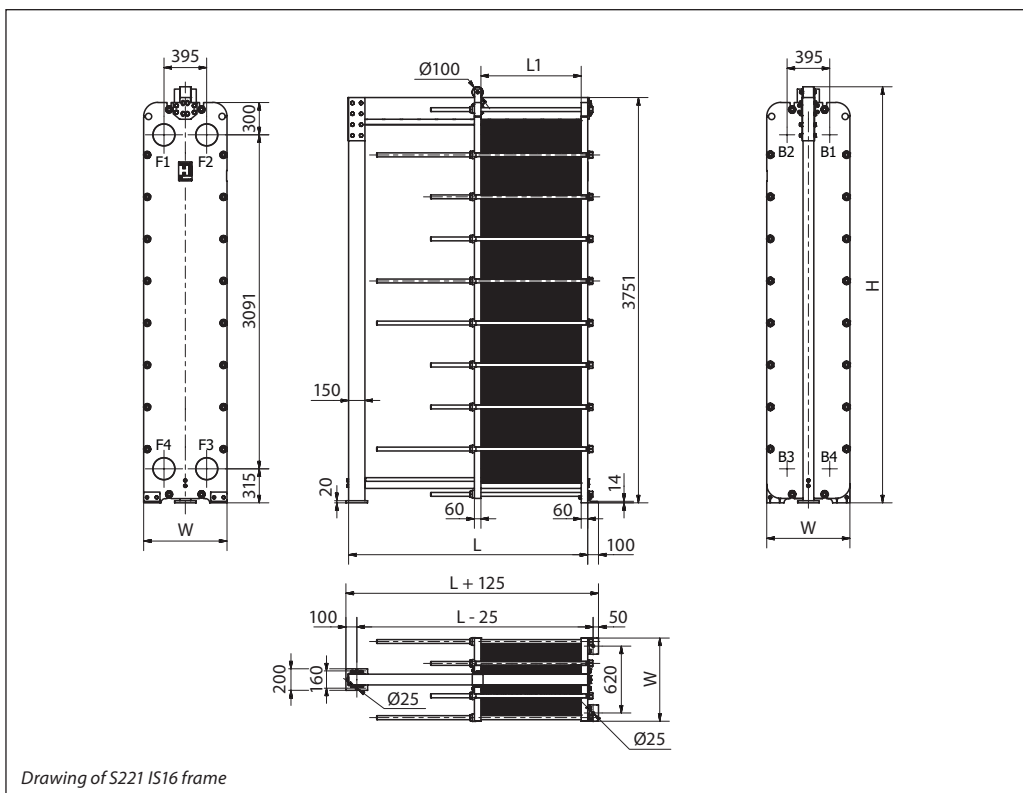
¹⁾ the indicated maximum number of plates is based on the minimum plate thickness allowable for the PN level of the unit;

²⁾ the maximum weight of the empty unit with the maximum allowable number of plates;

³⁾ PNclass 10 bar is available on request

Dimensions (continued)
Non-sanitary applications

S221 frames



Number of plates ¹⁾	L (frame length) (mm)	W (mm)	H (mm)	Weight max, empty ²⁾ (kg)	Connection type
S221 IS16					
7 – 64	810	770 (30.31")	3851 (151.61)	3392	DN 200 flange or 8"
65 – 140	1210			4159	
141 – 195	1510			4722	
196 – 231	1710			5106	
232 – 319	2210			6005	
320 – 413	2710			6967	
414 – 504	3210			8010	
505 – 686	4210			9935	
687 – 868	5210			4108 (161.73")	
869 – 1050	6210		13919		
S221 IS25					
7 – 61	825	790 (31.10")	3849 (151.53")	4411	DN 200 flange or 8"
62 – 133	1225			5316	
134 – 186	1525			5986	
187 – 222	1725			6439	
223 – 311	2225			7561	
312 – 400	2725			8682	
401 – 490	3225			9815	
491 – 668	4225			12058	
669 – 847	5225			4107 (161.69")	
848 – 1025	6225		16557		

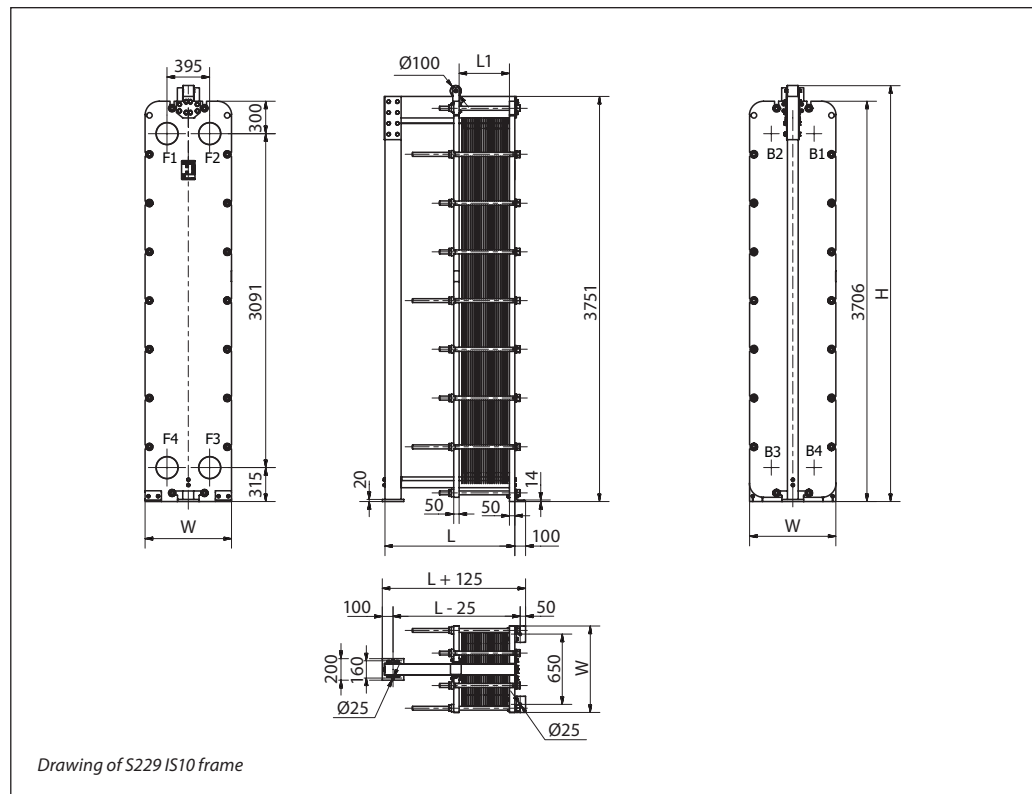
¹⁾ the indicated maximum number of plates is based on the minimum plate thickness allowable for the PN level of the unit;

²⁾ the maximum weight of the empty unit with the maximum allowable number of plates;

³⁾ PNclass 10 bar is available on request

Dimensions (continued)
Non-sanitary applications

S229 frames



Drawing of S229 IS10 frame

Number of plates ¹⁾	L (frame length) (mm)	W (mm)	H (mm)	Weight max, empty ²⁾ (kg)	Connection type	
S229 IS10						
7 – 33	800	800 (31.50")	3850 (151.61")	3307	DN 200 flange or 8"	
34 – 70	1200			3980		
71 – 98	1500			4488		
99 – 116	1700			4815		
117 – 162	2200			5651		
163 – 209	2700			6503		
210 – 255	3200			7340		
256 – 348	4200			9027		
349 – 440	5200			4108 (161.73")		10700
441 – 533	6200			12387		

¹⁾ the indicated maximum number of plates is based on the minimum plate thickness allowable for the PN level of the unit;
²⁾ the maximum weight of the empty unit with the maximum allowable number of plates;

