Alfa Laval in brief

Alfa Laval is a leading global provider of specialized products and engineered solutions.

Our equipment, systems and services are dedicated to helping customers to optimize the performance of their processes. Time and time again.

We help our customers to heat, cool, separate and transport products such as oil, water, chemicals, beverages, foodstuffs, starch and pharmaceuticals.

Our worldwide organization works closely with customers in almost 100 countries to help them stay ahead.

How to contact Alfa Laval

Up-to-date Alfa Laval contact details for all countries are always available on our website at www.alfalaval.com

Alfa Laval reserves the right to change specifications without prior notification.

ERC00680EN 1512

Shell-and-tube dry expansion evaporators Alfa Laval DH

A new shell-and-tube dry expansion evaporator for positive temperature applications



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Performance and features

The Alfa Laval's DH design has been optimized for R407F, R407C and R410A refrigerants but it can also work with R134a as well as other HFC , HFO refrigerants (like R1234ze) and also natural refrigerants like R290 and R1270. It has beeen developed for commercial and industrial refrigeration cooling with positive evaporation temperature, tipically in a range of 0°C/10°C.

With its innovative patented refrigerant distributor and new optimized plastic baffles designed to improve the brine side heat transfer performances, Alfa Laval's new DH shell-and-tube evaporator series guarantees maximum efficiency, low cost and compactness. Alfa Laval's DH exchange tubes has a specific inner grooved pattern to maximize the heat transfer coefficient and to limit the pressure drop negative effects.



Design data

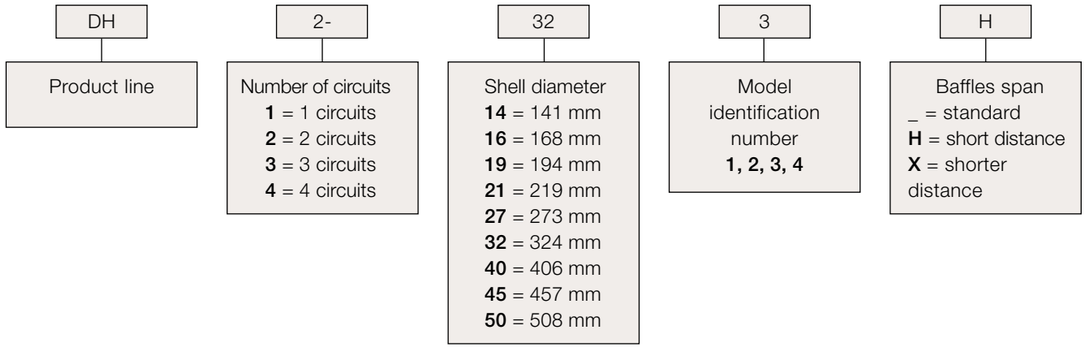
PED (CE) approval

Version	Tubes Side				Shell Side			
	DP (bar)	DT (°C)	Tmin (°C)	PT (bar)	DP (bar)	DT (°C)	Tmin (°C)	PT (bar)
STD	30	90	-10	42.9	10	90	-10	14.3
HP	45	90	-10	64.4	10	90	-10	14.3

DP: design pressure, **DT:** design temperature, **Tmin:** minimum design temperature, **PT:** test pressure

DH special version with Tmin = -40°C is available on demand. Please refer to your Alfa Laval local sales organization to have more information.

Denomination



In the description there can be also a letter indicating the water connections orientation.
Three available orientation for water connections: top (standard), left (L) and right (R).

Materials

The materials used for standard version of DH are the following:

Tubes: copper
Baffles: plastic
Tubes sheet: carbon steel
Shell and water connections: carbon steel
Header and refrigerant connections: carbon steel

Different materials are available on request, according to the following list. Please contact your Alfa Laval local sales organization for further details.

Tubes: copper-nickel 90/10 alloy, stainless steel AISI 316L, carbon steel
Baffles: carbon steel, stainless steel AISI 316L
Tubes sheet: stainless steel AISI316 L
Shell and water connections: stainless steel AISI316 L

Capacity and maximum allowable water flow chart

The capacities in the chart below are calculated with the following working conditions:

Refrigerant = R407C
Brine = Water
T_in_brine = 12°C
T_out_brine = 7°C
(8°C for DH_-141, DH_-142)
T_evap_dew = 2.75°C
T_cond_dew = 45.26°C
SC = 3K
SH = 5K

	Q_nom [kW]	DP_nom [kP]	W_nom [m3/h]	W_max [m3/h]
DH_-141	18.6	16	4	6.3
DH_-142	28.2	29	6	7.5
DH_-143	35.1	27	6	10
DH_-144	47	41	8	11
DH_-161	55.4	34	9.5	11.5
DH_-162	62.7	35	10.8	14.5
DH_-163	78.6	40	13.5	19
DH_-164	93.2	44	16	22
DH_-191	124.4	40	21.1	35
DH_-192	143.6	48	24.7	35
DH_-193	163.4	37	27.8	35
DH_-211	202.9	35	34.6	55
DH_-212	236.6	41	40.4	55
DH_-271	323.2	44	55.1	80
DH_-272	366	31	62.2	80
DH_-273	401.4	41	68.3	80
DH_-321	445.8	47	76.1	110
DH_-322	507.4	40	86.8	110
DH_-323	572.4	54	98	110
DH_-401	675.2	62	115	180
DH_-402	794.2	57	135.5	180
DH_-403	938.6	81	159.5	180
DH_-404	1019.4	104	173.4	200
DH_-451	1132	67	192.5	240
DH_-452	1259	81	216.8	240
DH_-501	1383.9	91	238.5	300
DH_-502	1562	107	269.4	320

SC: subcooling
SH: superheating
Q_nom: Nominal cooling capacity
DP_nom: Nominal water pressure drop
W_nom: Nominal water flow
W_max: Maximum allowable water flow

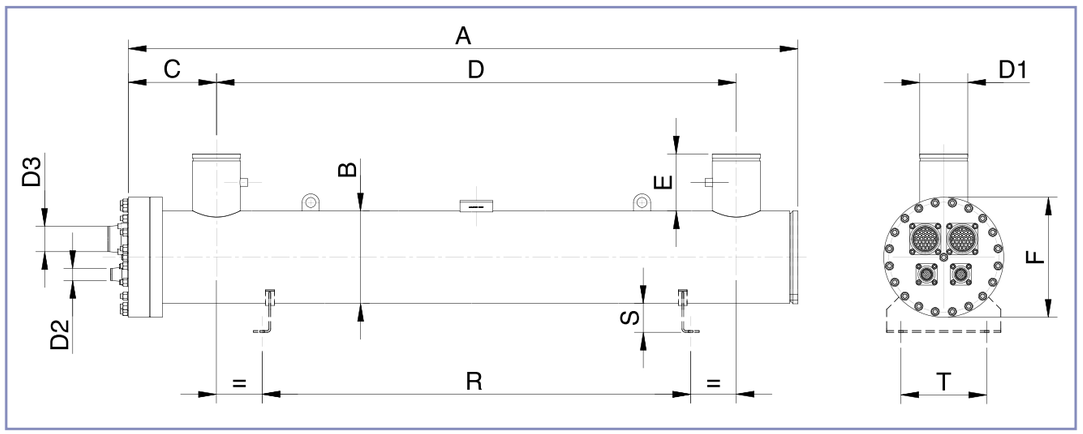
NOTE: The maximum allowable flow for version with reduced distance of baffles (H and X versions) are different from the one in chart above. Please make reference to shell and tube thermal selection software for maximum admittable flow of H and X versions.

General dimensions

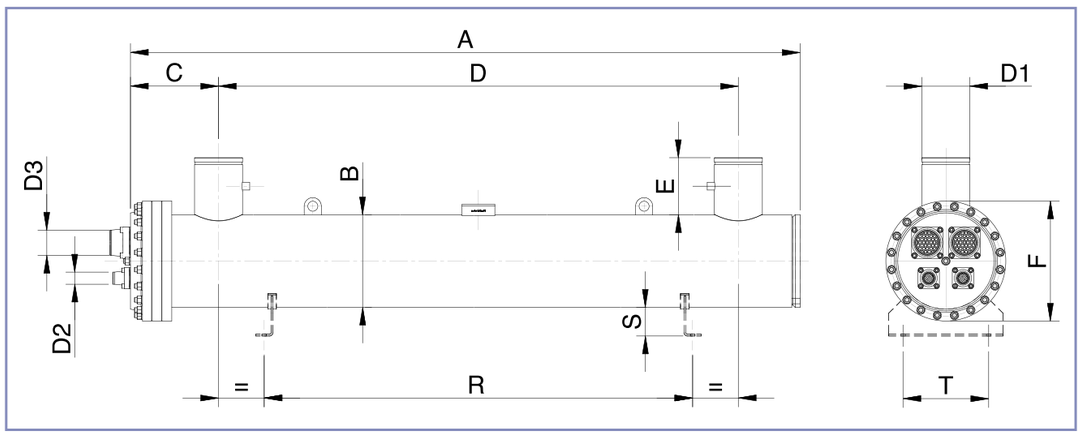
DH standard version is ‘not extractable tube bundle’ one. This means that the tube bundle is welded to the shell so the copper tubes can’t be removed from it.

DH is available in ‘extractable tube bundle’ version starting from shell diameter 168 mm. All models with shell diameter = 141 mm are not available in extractable version.

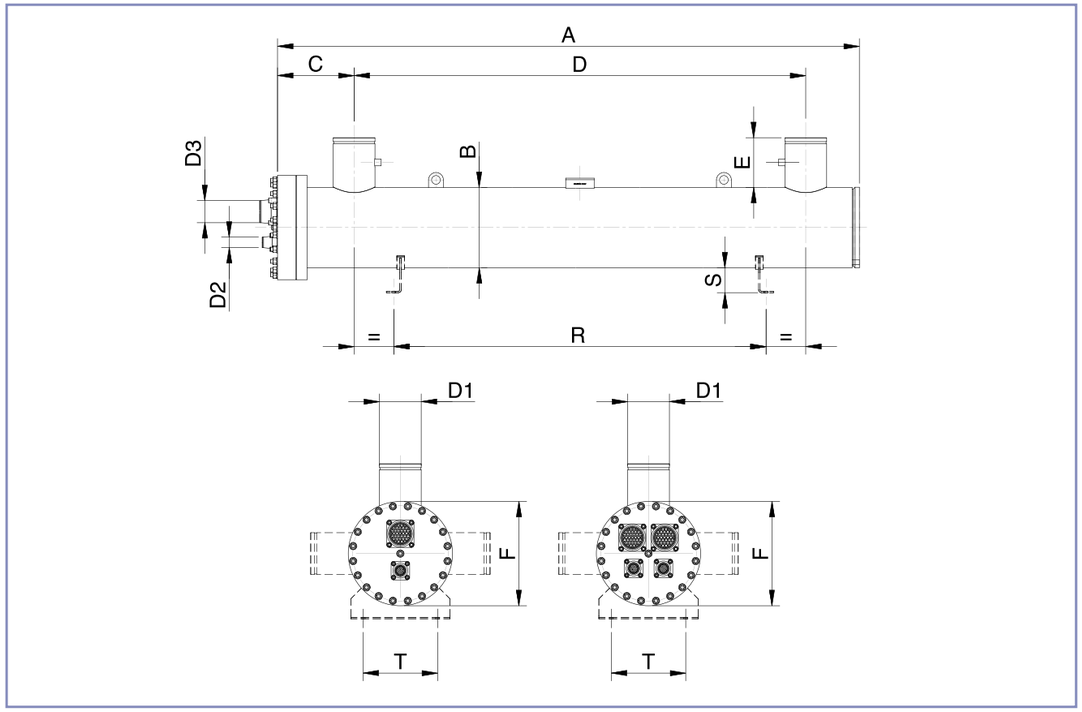
DH not extractable version



DH extractable version



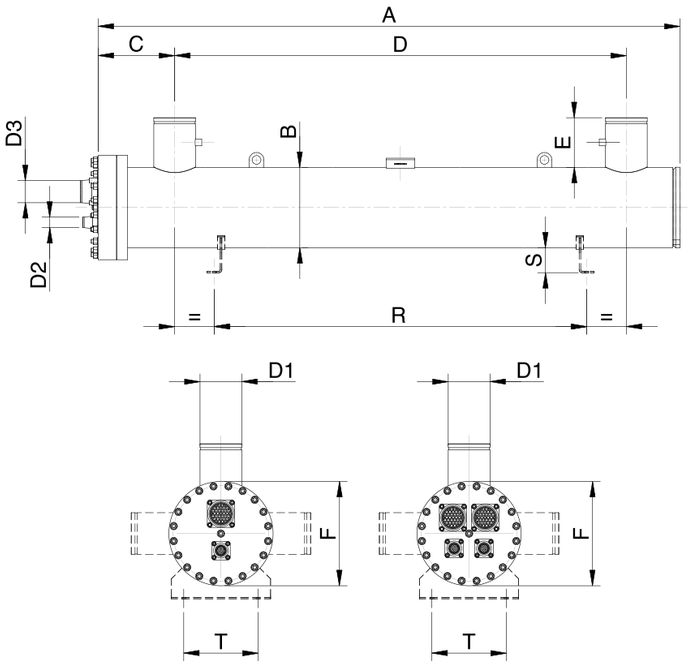
Shell diameter = 141 mm



	MODEL		DH1-141	DH1-142	DH1-143	DH2-143	DH1-144	DH2-144
Dimension	A	[mm]	905	1065	1265	1265	1415	1415
	B	[mm]	141.3	141.3	141.3	141.3	141.3	141.3
	C	[mm]	137	137	143	143	143	143
	D	[mm]	690	840	1040	1040	1190	1190
	E	[mm]	130	130	130	130	130	130
	F	[mm]	195	195	195	195	195	195
Supports	R	[mm]	550	650	800	800	950	950
	T	[mm]	160	160	160	160	160	160
	S	[mm]	60	60	60	60	60	60
Connections	Ref-in Conn	D2	RB22	RB22	RB22	RA16	RB22	RA16
	Ref-out Conn	D3	RC35	RC35	RC35	RC28	RC35	RC28
	Water Conn	D1	T11	T11	T2	T2	T2	T2
Volumes - Weights	Weight	[kg]	34	38	43	43	47	47
	VOL TUBE SIDE	[l]	3.9	4.6	5.5	5.5	6.2	6.2
	CAT TUBE SIDE	-	I	I	I	I	I	I
	VOL SHELL SIDE	[l]	7.6	9.0	10.8	10.8	12.1	12.1
	CAT SHELL SIDE	-	art 3.3	art 3.3	art 3.3	art 3.3	art 3.3	art 3.3

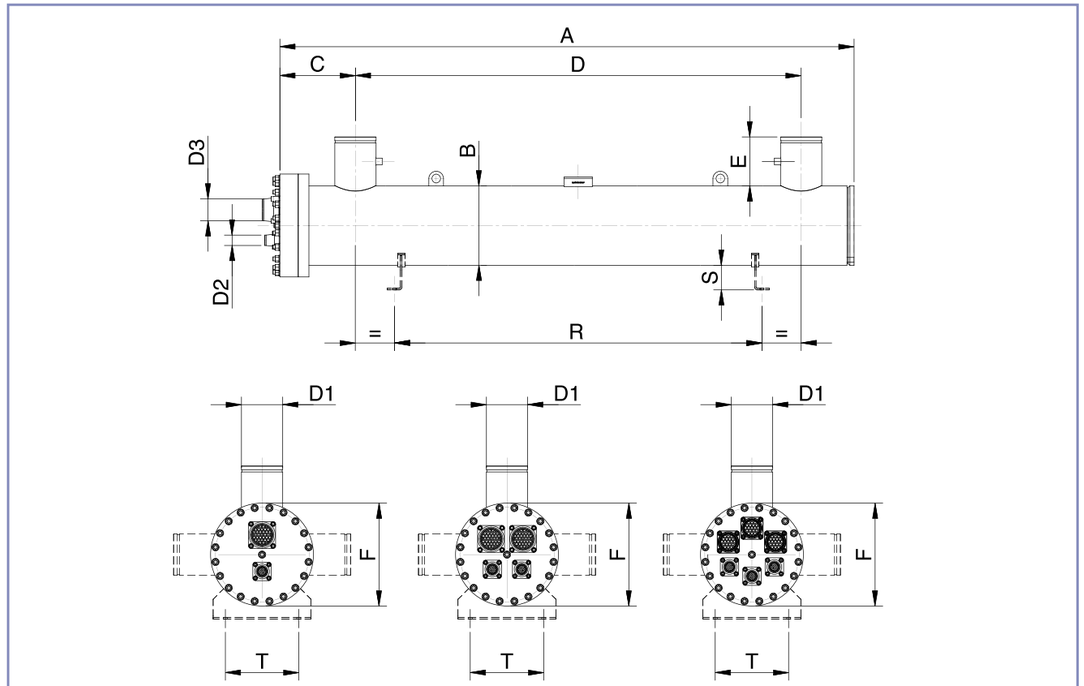
General dimensions

Shell diameter = 168 mm



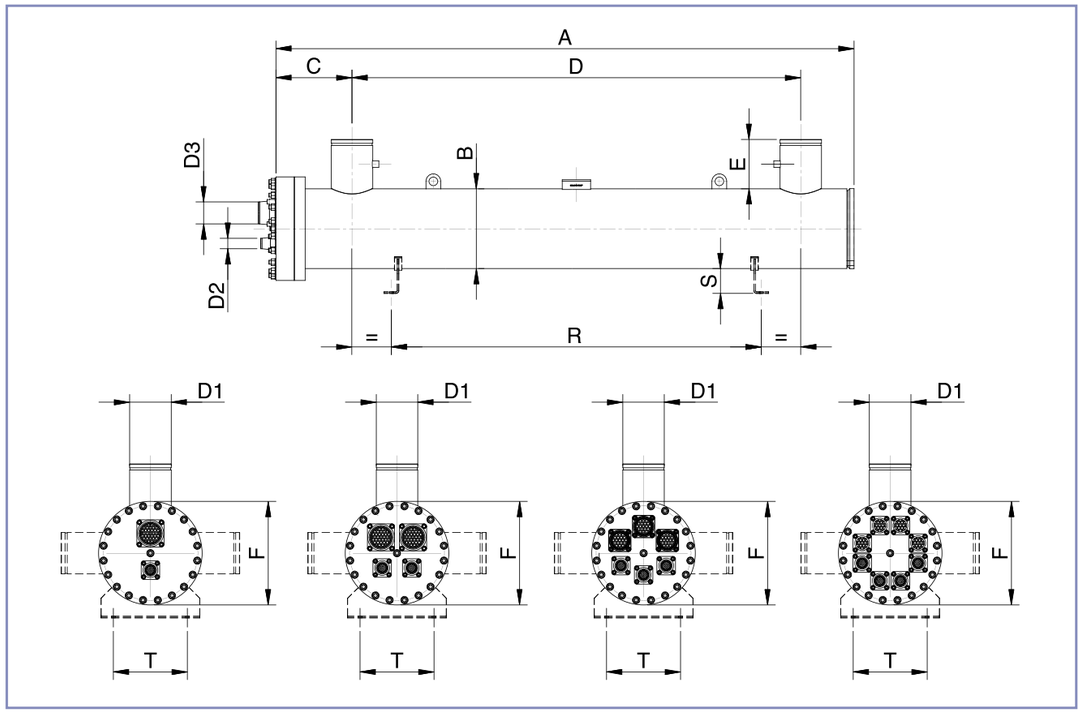
	MODEL		DH1-161	DH2-161	DH1-162	DH2-162	DH1-163	DH2-163	DH1-164	DH2-164
Dimension	A	[mm]	1285	1285	1435	1435	1635	1635	1785	1785
	A (extr.)	[mm]	1297	1297	1447	1447	1647	1647	1797	1797
	B	[mm]	168.3	168.3	168.3	168.3	168.3	168.3	168.3	168.3
	C	[mm]	151	151	151	151	151	151	151	151
	C (extr.)	[mm]	161	161	161	161	161	161	161	161
	D	[mm]	1030	1030	1180	1180	1380	1380	1530	1530
	E	[mm]	130	130	130	130	130	130	130	130
	F	[mm]	230	230	230	230	230	230	230	230
Supports	R	[mm]	800	800	950	950	1100	1100	1200	1200
	T	[mm]	160	160	160	160	160	160	160	160
	S	[mm]	60	60	60	60	60	60	60	60
Connections	Ref-in Conn	D2	RB22	RB22	RB22	RB22	RB22	RB22	RB22	RB22
	Ref-out Conn	D3	FC-B54	RC35	FC-B54	RC35	FC-B54	RC35	FC-B54	RC35
	Water Conn	D1	T21	T21	T21	T21	T21	T21	T21	T21
Volumes - Weights	Weight	[kg]	58	58	62	62	69	69	73	74
	VOL TUBE SIDE	[l]	7.7	7.6	8.6	8.5	9.8	9.7	10.7	10.6
	CAT TUBE SIDE	-	II	II	II	II	II	II	II	II
	VOL SHELL SIDE	[l]	16.6	16.6	18.5	18.5	21.1	21.1	23.0	24.4
	CAT SHELL SIDE	-	art 3.3	art 3.3	art 3.3	art 3.3	art 3.3	art 3.3	art 3.3	art 3.3

Shell diameter = 194 mm



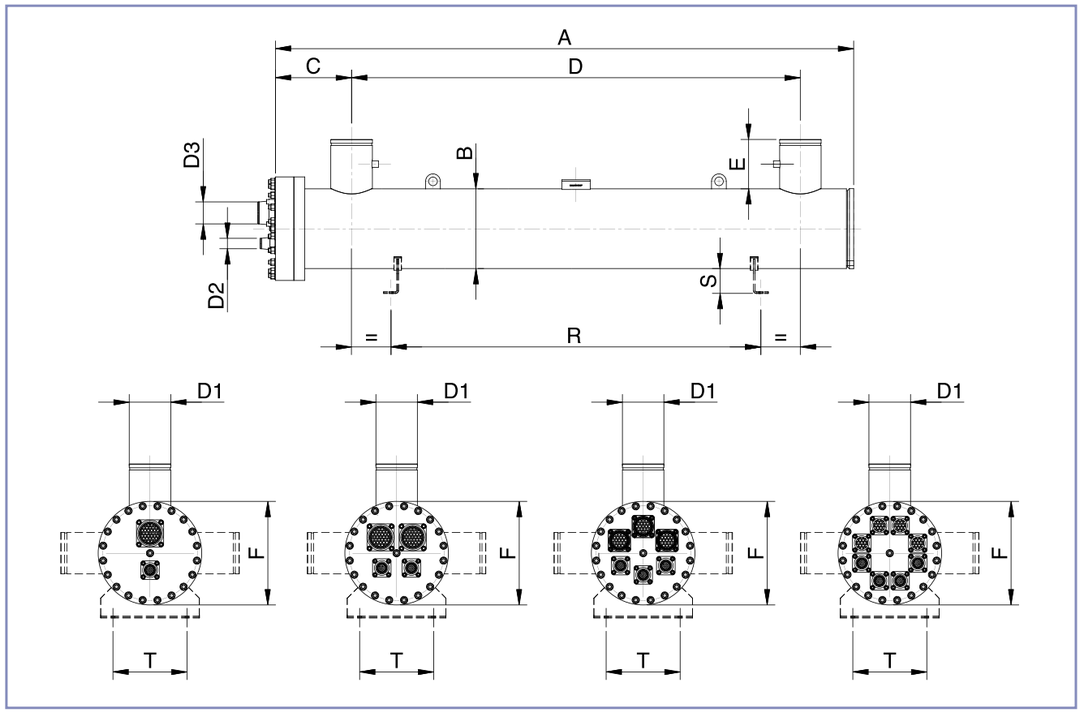
	MODEL		DH1-191	DH2-191	DH3-191	DH1-192	DH2-192	DH3-192	DH1-193	DH2-193	DH3-193
Dimension	A	[mm]	1476	1476	1476	1609	1609	1609	1779	1779	1779
	A (extr.)	[mm]	1487	1487	1487	1620	1620	1613	1790	1790	1783
	B	[mm]	193.7	193.7	193.7	193.7	193.7	193.7	193.7	193.7	193.7
	C	[mm]	212	212	212	212	212	212	212	212	212
	C (extr.)	[mm]	212	212	212	212	212	212	212	212	212
	D	[mm]	1160	1160	1160	1290	1290	1290	1460	1460	1460
	E	[mm]	130	130	130	130	130	130	130	130	130
	F	[mm]	260	260	260	260	260	260	260	260	260
Supports	R	[mm]	800	800	800	1000	1000	1000	1200	1200	1200
	T	[mm]	160	160	160	160	160	160	160	160	160
	S	[mm]	60	60	60	60	60	60	60	60	60
Connections	Ref-in Conn	D2	FC-A35	RB22	WA22	FC-A35	RB22	WA22	FC-A35	RB22	WA22
	Ref-out Conn	D3	FC-B67	FC-A42	WA35	FC-B67	FC-A42	WA35	FC-B67	FC-A42	WA35
	Water Conn	D1	J3	J3	J3	J3	J3	J3	J3	J3	J3
Volumes - Weights	Weight	[kg]	79	79	79	84	84	84	90	90	90
	VOL TUBE SIDE	[l]	11.1	11.0	11.0	12.1	12.0	12.0	13.4	13.3	13.2
	CAT TUBE SIDE	-	II	II	II	II	II	II	II	II	II
	VOL SHELL SIDE	[l]	26.5	26.5	26.5	28.9	28.9	28.9	31.9	31.9	31.9
	CAT SHELL SIDE	-	art 3.3	art 3.3	art 3.3	art 3.3	art 3.3	art 3.3	art 3.3	art 3.3	art 3.3

Shell diameter = 219 mm



	MODEL		DH1-211	DH2-211	DH3-211	DH4-211	DH1-212	DH2-212	DH3-212	DH4-212
Dimension	A	[mm]	1826	1826	1826	1826	2036	2036	2036	2036
	A (extr.)	[mm]	1835	1835	1826	1826	2045	2045	2036	2036
	B	[mm]	219.1	219.1	219.1	219.1	219.1	219.1	219.1	219.1
	C	[mm]	239	239	239	239	239	239	239	239
	C (extr.)	[mm]	235	235	235	235	235	235	235	235
	D	[mm]	1460	1460	1460	1460	1670	1670	1670	1670
	E	[mm]	150	150	150	150	150	150	150	150
	F	[mm]	290	290	290	290	290	290	290	290
Supports	R	[mm]	1200	1200	1200	1200	1400	1400	1400	1400
	T	[mm]	260	260	260	260	260	260	260	260
	S	[mm]	80	80	80	80	80	80	80	80
Connections	Ref-in Conn	D2	FC-A35	RC35	WA22	WA22	FC-A35	RC35	WA22	WA22
	Ref-out Conn	D3	FC-B67	FC-A54	WA42	WA35	FC-B67	FC-A54	WA42	WA35
	Water Conn	D1	J4	J4	J4	J4	J4	J4	J4	J4
Volumes - Weights	Weight	[kg]	113	113	113	113	123	123	123	123
	VOL TUBE SIDE	[l]	17.8	17.8	17.7	17.6	20.0	20.0	19.9	19.9
	CAT TUBE SIDE	-	II	II	II	II	II	II	II	II
	VOL SHELL SIDE	[l]	43.1	43.1	43.1	43.1	47.7	47.7	47.7	47.7
	CAT SHELL SIDE	-	art 3.3	art 3.3	art 3.3	art 3.3	art 3.3	art 3.3	art 3.3	art 3.3

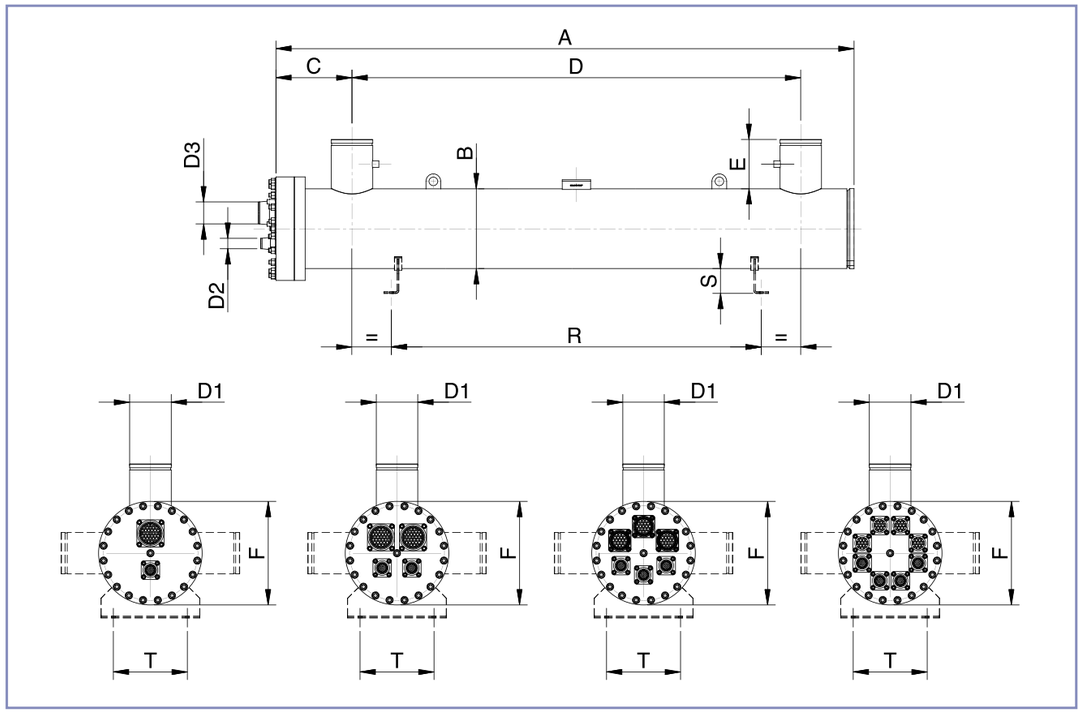
Shell diameter = 273 mm



	MODEL		DH1-271	DH2-271	DH3-271	DH4-271	DH1-272	DH2-272	DH3-272	DH4-272	DH1-273	DH2-273	DH3-273	DH4-273
Dimension	A	[mm]	2009	2009	2009	2009	2009	2009	2009	2009	2009	2009	2009	2009
	A (extr.)	[mm]	2025	2025	2013	2013	2025	2025	2013	2013	2025	2025	2013	2013
	B	[mm]	273	273	273	273	273	273	273	273	273	273	273	273
	C	[mm]	267	267	267	267	267	267	267	267	267	267	267	267
	C (extr.)	[mm]	262	262	262	262	262	262	262	262	262	262	262	262
	D	[mm]	1590	1590	1590	1590	1590	1590	1590	1590	1590	1590	1590	1590
	E	[mm]	150	150	150	150	150	150	150	150	150	150	150	150
	F	[mm]	350	350	350	350	350	350	350	350	350	350	350	350
Supports	R	[mm]	1300	1300	1300	1300	1300	1300	1300	1300	1300	1300	1300	1300
	T	[mm]	300	300	300	300	300	300	300	300	300	300	300	300
	S	[mm]	100	100	100	100	100	100	100	100	100	100	100	100
Connections	Ref-in Conn	D2	FC-A35	FC-A35	WA35	WA22	FC-A35	FC-A35	WA35	WA22	FC-A35	FC-A35	WA35	WA22
	Ref-out Conn	D3	FC-C80	FC-B54	WA54	WA42	FC-C80	FC-B54	WA54	WA42	FC-C80	FC-B54	WA54	WA42
	Water Conn	D1	J5	J5	J5	J5	J5	J5	J5	J5	J5	J5	J5	J5
Volumes - Weights	Weight	[kg]	188	188	188	189	196	196	195	196	204	204	203	204
	VOL TUBE SIDE	[l]	26.0	25.9	25.9	25.7	29.2	29.1	29.1	28.9	33.0	32.9	32.9	32.7
	CAT TUBE SIDE	-	II	II	II	II	II	II	II	II	II	II	II	II
	VOL SHELL SIDE	[l]	77.4	77.4	77.4	77.4	73.4	73.4	73.4	73.4	68.8	68.8	68.8	68.8
	CAT SHELL SIDE	-	art 3.3	art 3.3	art 3.3	art 3.3	art 3.3	art 3.3	art 3.3	art 3.3	art 3.3	art 3.3	art 3.3	art 3.3

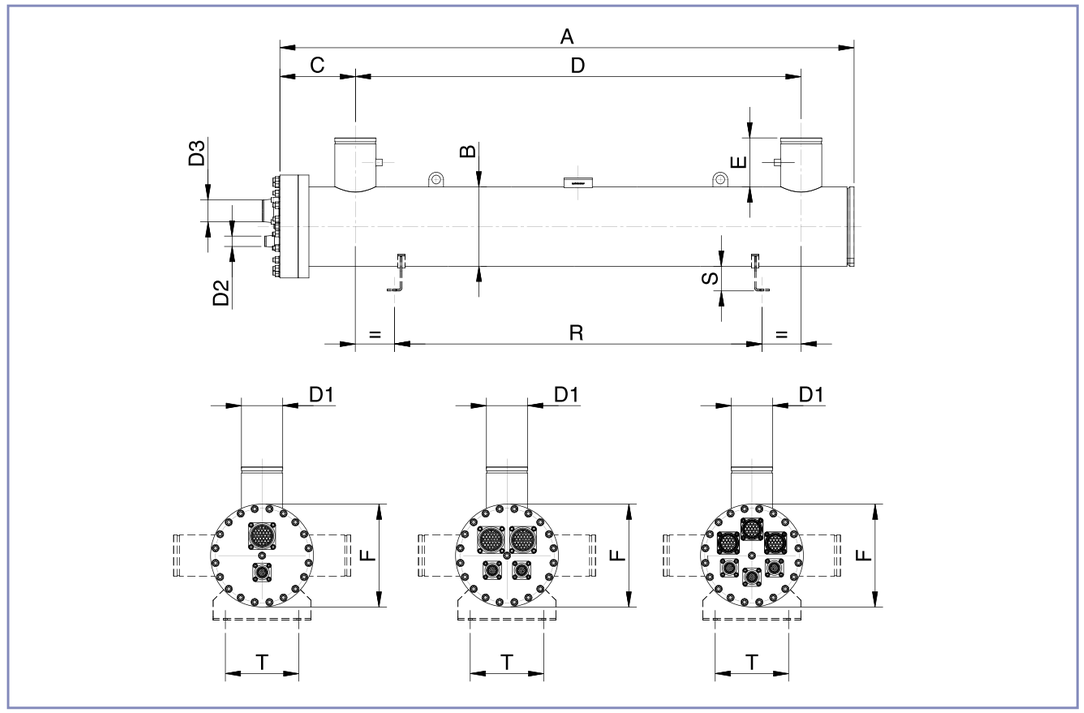
General dimensions

Shell diameter = 324 mm



	MODEL		DH1-321	DH2-321	DH3-321	DH4-321	DH1-322	DH2-322	DH3-322	DH4-322	DH1-323	DH2-323	DH3-323	DH4-323
Dimension	A	[mm]	2323	2323	2323	2323	2323	2323	2323	2323	2323	2323	2323	2323
	A (extr.)	[mm]	2344	2344	2332	2332	2344	2344	2332	2332	2344	2344	2332	2332
	B	[mm]	323.9	323.9	323.9	323.9	323.9	323.9	323.9	323.9	323.9	323.9	323.9	323.9
	C	[mm]	299	299	299	299	299	299	299	299	299	299	299	299
	C (extr.)	[mm]	293	293	293	293	293	293	293	293	293	293	293	293
	D	[mm]	1820	1820	1820	1820	1820	1820	1820	1820	1820	1820	1820	1820
	E	[mm]	200	200	200	200	200	200	200	200	200	200	200	200
	F	[mm]	400	400	400	400	400	400	400	400	400	400	400	400
Supports	R	[mm]	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500
	T	[mm]	300	300	300	300	300	300	300	300	300	300	300	300
	S	[mm]	100	100	100	100	100	100	100	100	100	100	100	100
Connections	Ref-in Conn	D2	FC-A35	FC-A35	FC-A35	FC-A35	FC-A35	FC-A35	FC-A35	FC-A35	FC-A35	FC-A35	FC-A35	FC-A35
	Ref-out Conn	D3	FC-C80	FC-C80	FC-B67	FC-A54	FC-C80	FC-C80	FC-B67	FC-A54	FC-C80	FC-C80	FC-B67	FC-A54
	Water Conn	D1	J6	J6	J6	J6	J6	J6	J6	J6	J6	J6	J6	J6
Volumes - Weights	Weight	[kg]	285	284	284	284	292	291	291	291	315	314	313	314
	VOL TUBE SIDE	[l]	43.5	43.6	43.5	43.4	49.0	49.1	49.0	48.9	57.0	57.1	57.1	57.0
	CAT TUBE SIDE	-	III	III	III	III	III	III	III	III	III	III	III	III
	VOL SHELL SIDE	[l]	127.6	127.6	127.6	127.6	121.5	121.5	121.5	121.5	111.0	111.0	111.0	111.0
	CAT SHELL SIDE	-	art 3.3	art 3.3	art 3.3	art 3.3	art 3.3	art 3.3	art 3.3	art 3.3	art 3.3	art 3.3	art 3.3	art 3.3

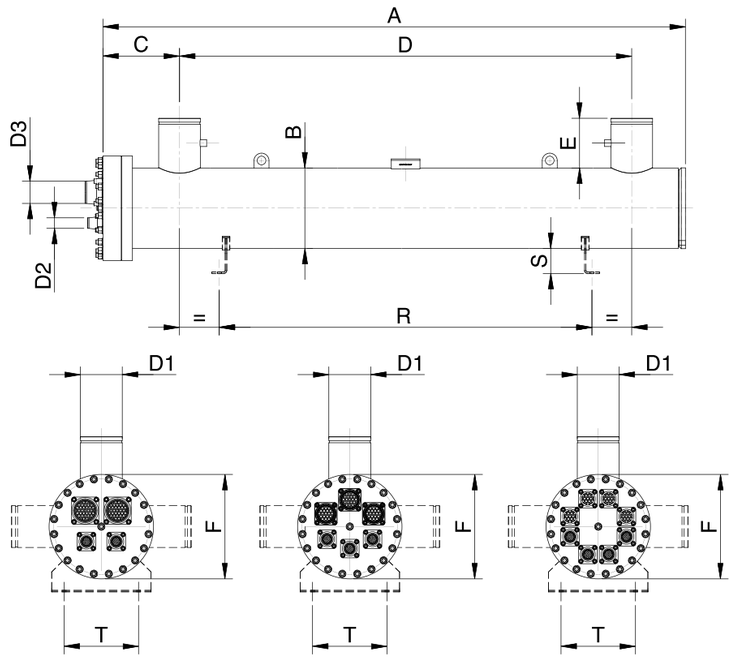
Shell diameter = 406 mm



	MODEL		DH2-401	DH3-401	DH4-401	DH2-402	DH3-402	DH4-402	DH2-403	DH3-403	DH4-403	DH2-404	DH3-404	DH4-404
Dimension	A	[mm]	2230	2230	2230	2230	2230	2230	2230	2230	2230	2750	2750	2750
	A (extr.)	[mm]	2265	2254	2254	2265	2254	2254	2265	2254	2254	2785	2774	2774
	B	[mm]	406.4	406.4	406.4	406.4	406.4	406.4	406.4	406.4	406.4	406.4	406.4	406.4
	C	[mm]	338	338	338	338	338	338	338	338	338	338	338	338
	C (extr.)	[mm]	338	338	338	338	338	338	338	338	338	338	338	338
	D	[mm]	1660	1660	1660	1660	1660	1660	1660	1660	1660	2180	2180	2180
	E	[mm]	200	200	200	200	200	200	200	200	200	200	200	200
	F	[mm]	490	490	490	490	490	490	490	490	490	490	490	490
Supports	R	[mm]	1400	1400	1400	1400	1400	1400	1400	1400	1400	1800	1800	1800
	T	[mm]	400	400	400	400	400	400	400	400	400	400	400	400
	S	[mm]	120	120	120	120	120	120	120	120	120	120	120	120
Connections	Ref-in Conn	D2	FC-A35	FC-A35	FC-A35	FC-A35	FC-A35	FC-A35	FC-A35	FC-A35	FC-A35	FC-A35	FC-A35	FC-A35
	Ref-out Conn	D3	FC-C80	FC-C80	FC-B67	FC-C80	FC-C80	FC-B67	FC-C80	FC-C80	FC-B67	FC-C80	FC-C80	FC-B67
	Water Conn	D1	J8	J8	J8	J8	J8	J8	J8	J8	J8	J8	J8	J8
Volumes - Weights	Weight	[kg]	415	414	414	433	432	432	462	461	461	544	543	543
	VOL TUBE SIDE	[l]	66.4	66.5	66.4	74.4	74.5	74.4	88.3	88.4	88.3	109.5	109.6	109.5
	CAT TUBE SIDE	-	III	III	III	III	III	III	III	III	III	IV	IV	IV
	VOL SHELL SIDE	[l]	195.6	195.6	195.6	185.7	185.7	185.7	168.8	168.8	168.8	205.9	205.9	205.9
	CAT SHELL SIDE	-	art 3.3	art 3.3	art 3.3	art 3.3	art 3.3	art 3.3	art 3.3	art 3.3	art 3.3	art 3.3	art 3.3	art 3.3

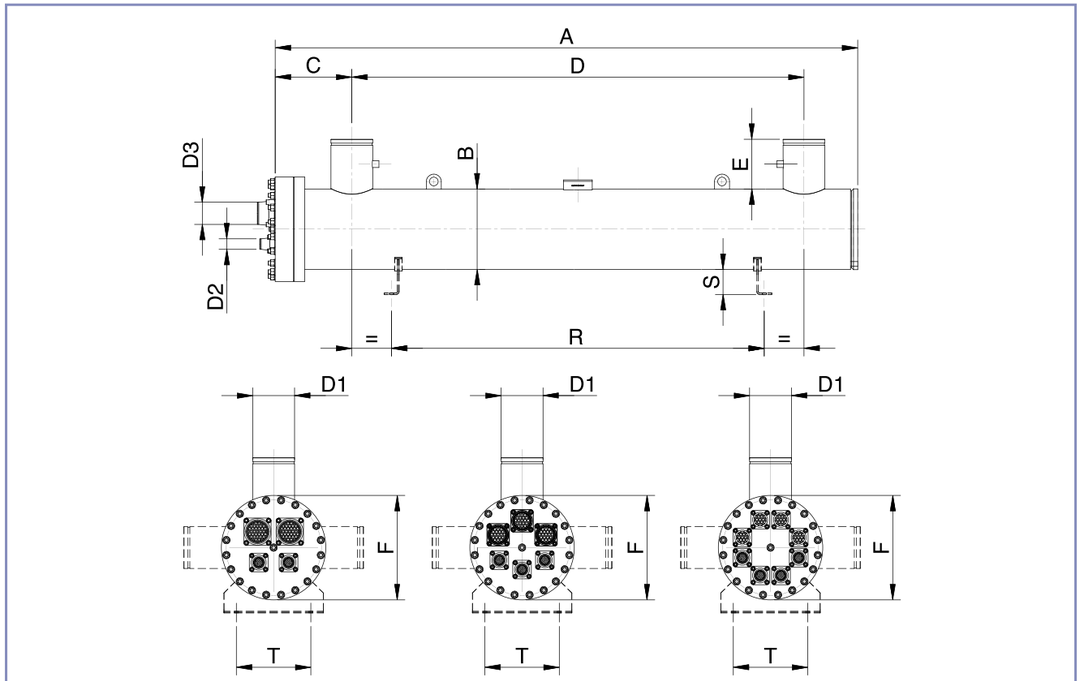
General dimensions

Shell diameter = 457 mm



	MODEL		DH2-451	DH3-451	DH4-451	DH2-452	DH3-452	DH4-452
Dimension	A	[mm]	2390	2390	2390	2390	2390	2390
	A (extr.)	[mm]	2420	2404	2404	2420	2404	2404
	B	[mm]	457	457	457	457	457	457
	C	[mm]	373	373	373	373	373	373
	C (extr.)	[mm]	368	368	368	368	368	368
	D	[mm]	1760	1760	1760	1760	1760	1760
	E	[mm]	200	200	200	200	200	200
	F	[mm]	550	550	550	550	550	550
Supports	R	[mm]	1500	1500	1500	1500	1500	1500
	T	[mm]	310	310	310	310	310	310
	S	[mm]	121	121	121	121	121	121
Connections	Ref-in Conn	D2	FC-A35	FC-A35	FC-A35	FC-A35	FC-A35	FC-A35
	Ref-out Conn	D3	FC-C80	FC-C80	FC-B67	FC-C80	FC-C80	FC-B67
	Water Conn	D1	J8	J8	J8	J8	J8	J8
Volumes - Weights	Weight	[kg]	602	600	600	632	631	631
	VOL TUBE SIDE	[l]	110.9	110.9	110.8	124.5	124.6	124.5
	CAT TUBE SIDE	-	IV	IV	IV	IV	IV	IV
	VOL SHELL SIDE	[l]	235.1	235.1	235.1	218.2	218.2	218.2
	CAT SHELL SIDE	-	art 3.3	art 3.3	art 3.3	art 3.3	art 3.3	art 3.3

Shell diameter = 508 mm

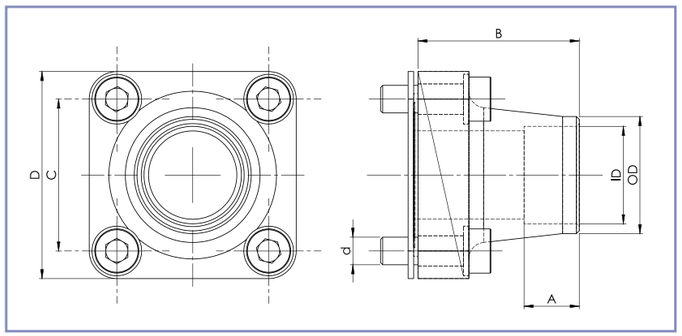


	MODEL		DH2-501	DH3-501	DH4-501	DH2-502	DH3-502	DH4-502
Dimension	A	[mm]	2820	2820	2820	2820	2820	2820
	A (extr.)	[mm]	2850	2834	2834	2850	2834	2834
	B	[mm]	508	508	508	508	508	508
	C	[mm]	398	398	398	398	398	398
	C (extr.)	[mm]	393	393	393	393	393	393
	D	[mm]	2140	2140	2140	2140	2140	2140
	E	[mm]	250	250	250	250	250	250
	F	[mm]	600	600	600	600	600	600
Supports	R	[mm]	1800	1800	1800	1800	1800	1800
	T	[mm]	350	350	350	350	350	350
	S	[mm]	120	120	120	120	120	120
Connections	Ref-in Conn	D2	FC-A42	FC-A35	FC-A35	FC-A42	FC-A42	FC-A42
	Ref-out Conn	D3	FC-C80	FC-C80	FC-B67	FC-C80	FC-C80	FC-B67
	Water Conn	D1	J10	J10	J10	J10	J10	J10
Volumes - Weights	Weight	[kg]	777	776	776	832	830	830
	VOL TUBE SIDE	[l]	141.3	141.4	141.3	165.8	165.8	165.7
	CAT TUBE SIDE	-	IV	IV	IV	IV	IV	IV
	VOL SHELL SIDE	[l]	378.7	378.7	378.7	348.5	348.5	348.5
	CAT SHELL SIDE	-	art 3.3	art 3.3	art 3.3	art 3.3	art 3.3	art 3.3

Refrigerant connections

The connection between the evaporator and the refrigerant circuit is made, depending on the evaporator size, with flange connections, welding connections or Rotalock connections.

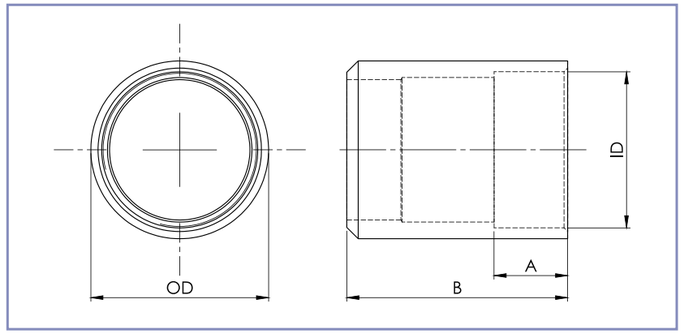
Flange connections





Type	A	B	C	D	d	Name	Tube	Connection		
	[mm]	[mm]	[mm]	[mm]	[mm]		ODS [mm]	ODS [inch]	Material	ID [mm]
A	20	60	55	75	M10	FC-A35	35	1 3/8"	Copper	35.3
	20	60	55	75	M10	FC-A42	42	1 5/8"	Copper	42.4
	20	60	55	75	M10	FC-A54	54	2 1/8"	Copper	54.4
B	20	70	70	90	M10	FC-B54	54	2 1/8"	Copper	54.4
	20	70	70	90	M10	FC-B67	66.7	2 5/8"	Copper	67.2
C	20	70	90	110	M12	FC-C80	80	3 1/8"	Copper	80.6

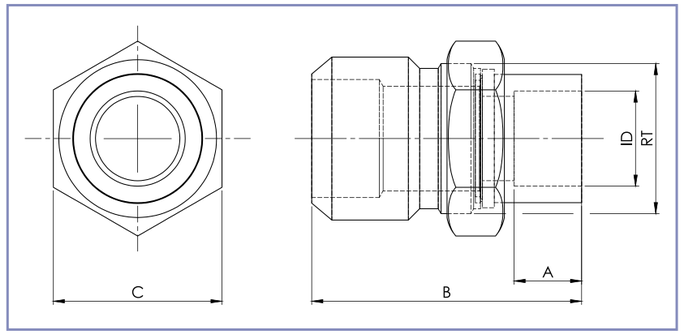
Welding connections





Type	A	B	Name	Connection		
	[mm]	[mm]		ODS [mm]	ID [mm]	OD [mm]
A	20	60	WA22	22	23	26.7
	20	60	WA35	35	35.3	42.4
	20	60	WA42	42	42	48.3
	20	60	WA54	54	54.5	60.3

Rotalock connections





Type	A	B	C	RT	Name	Connection		
	[mm]	[mm]	[mm]			ODS [mm]	ODS [inch]	ID [mm]
A	20	80	30	1" - 14UNF	RA16	16	5/8"	16.3
B	20	80	36	1 1/4" - 12UNF	RB22	22	7/8"	22.5
C	20	80	50	1 3/4" - 12UNF	RC28	28	-	28.3
	20	80	50	1 3/4" - 12UNF	RC35	35	1 3/8"	35.3

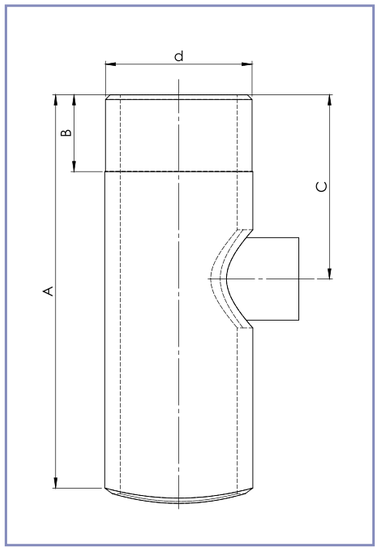
Brine connections

Different connections are available, depending on the evaporator size:

- with UNI/ISO 7/1 R thread up to 2 ½”
- with Victaulic flexible joint starting with 3” (DN 80)
- with Vic-Flange water connections starting with 3” (DN 80)
- with welded flange according to EN 1092-1

The flexible joint gasket are compatible with liquids normally used in refrigeration and air conditioning applications and are suitable to be used within -40°C and +90°C. The joints are supplied with flexible joint and a slot end with groove.

Threaded water connections

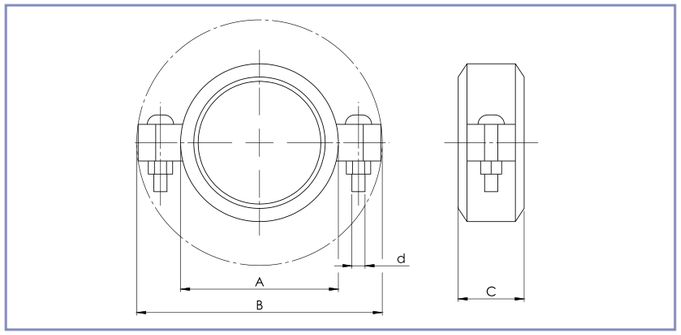




Type	A	B	C	Name	d
	[mm]	[mm]	[mm]		[in]
DH 141-142	130	25	60	T11	1 1/2
DH 143-144	130	25	60	T2	2
DH 161-162-163-164	130	35	60	T21	2 1/2

Victaulic flexible joint water connections

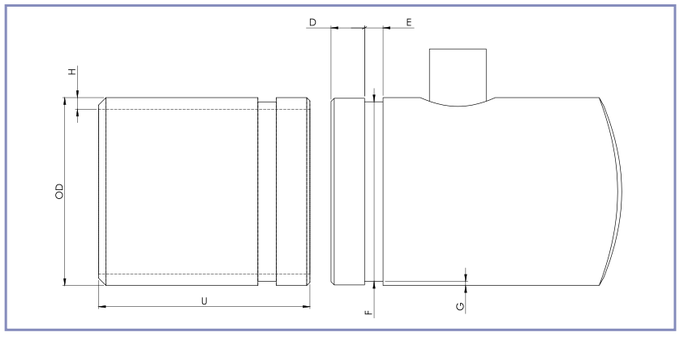
Flexible joint





Type	A	B	C	Name	OD	DN
	[mm]	[mm]	[mm]		[mm]	
DH 191-192-193	127	181	48	J3	88.9	80 (3")
DH 211-212	149,2	212,8	50,8	J4	114,3	100 (4")
DH 271-272-273	177,8	250,8	50,8	J5	141,3	125 (5")
DH 321-322-323	203,2	285,8	50,8	J6	168,3	150 (6")
DH 401-402-403-404-451-452	263,5	349,3	60,3	J8	219,1	200 (8")
DH 501-502	346	435	67	J10	273	250 (10")

Connection pipe



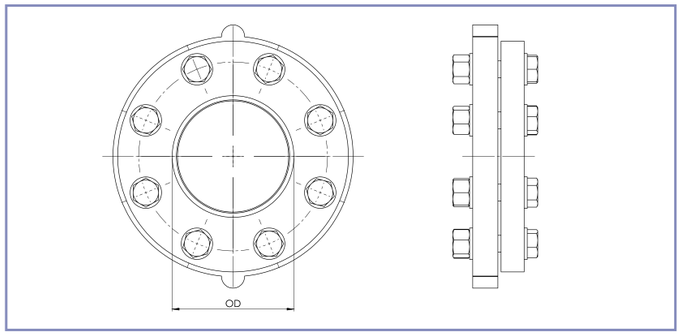


Type	DN	D	E	F	G
		[mm]	[mm]	[mm]	[mm]
DH 191-192-193	80 (3")	15,9	7,95	84,9	2
DH 211-212	100 (4")	15,9	9,5	110,1	2,1
DH 271-272-273	125 (5")	15,9	9,51	35,5	2,9
DH 321-322-323	150 (6")	19	9,5	163,9	2,2
DH 401-402-403-404-451-452	200 (8")	19	11,1	214,4	2,3
DH 501-502	250 (10")	19	12.7	268,3	2,4

Vic-Flange water connections

On request Vic-flanges can be supplied for water side connections.
The Vic-Flange kit contains:

- Vic-Flange adapter (see picture below) with gasket
- Carbon steel counter flange according to EN 1092-1

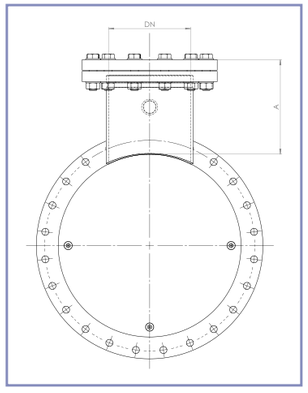




Welded flange water connections

Only for extractable tube bundle version, ALFA LAVAL DH can also be supplied with welded flange according to EN 1092-1.

Type	DN	A
	[mm]	
DH 141-142	40	130
DH 143-144	50	130
DH 161-162-163-164	65	130
DH 191-192-193	80	165
DH 211-212	100	165
DH 271-272-273	125	165
DH 321-322-323	150	215
DH 401-402-403-404-451-452	200	215
DH 501-502	250	265

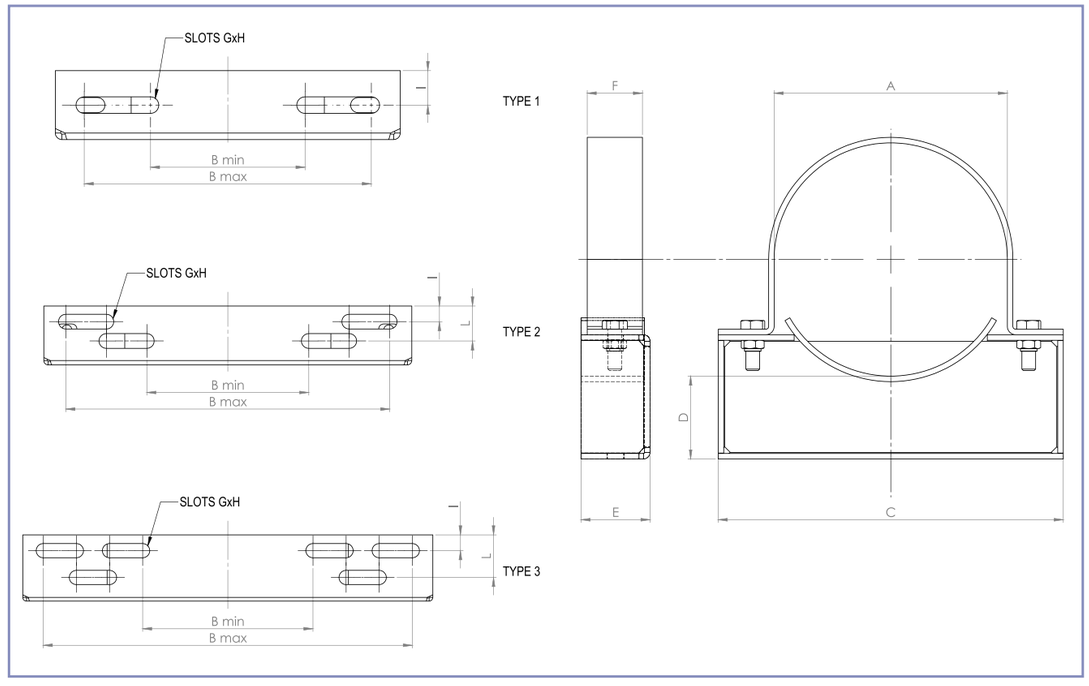




Options

The following options are available for DH evaporator:

- Vic-flanges water connections (see ‘Brine connections’ section for more details)
- Insulation (thickness ¾”) made of close cell elastomer layer (glued) to the evaporator surface with textile covering. The thickness of the insulation is 19 mm.
- Welded supports (see ‘General dimension’ section more informations)
- Brackets supports: Alfa Laval DH can be equipped with supports welded to the shell (illustrated in the ‘General dimension’ section) or with universal brackets which are positioned in the installation phase and allows therefore the maximum flexibility (available up to shell diameter 406 mm). See table below for brackets dimensions . All dimensions are in mm.



A	B		C	D	E	F	SLOTS			I	L
	min	max					G	H	Type		
140	82	178	220	60	50	40	12	60	1	25	-
168	112	208	250	60	50	40	12	60	1	25	-
194	46	238	280	60	50	40	12	60	2	15	32
219	82	276	320	80	50	40	12	60	2	15	32
273	176	352	400	100	60	50	16	60	2	17	38
324	108	372	420	100	60	50	16	60	3	17	38
406	216	468	520	120	80	60	18	60	3	20	54

