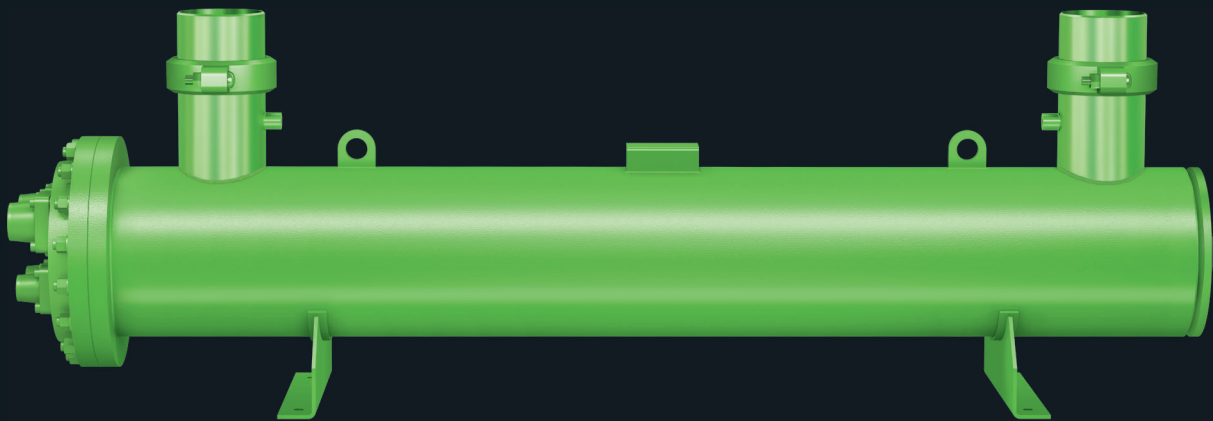




DAS HERZ DER FRISCHE

# DRY-EXPANSION EVAPORATORS

DP-273-1 EN



DH SERIES



HEAT  
EXCHANGERS



HFO  
READY



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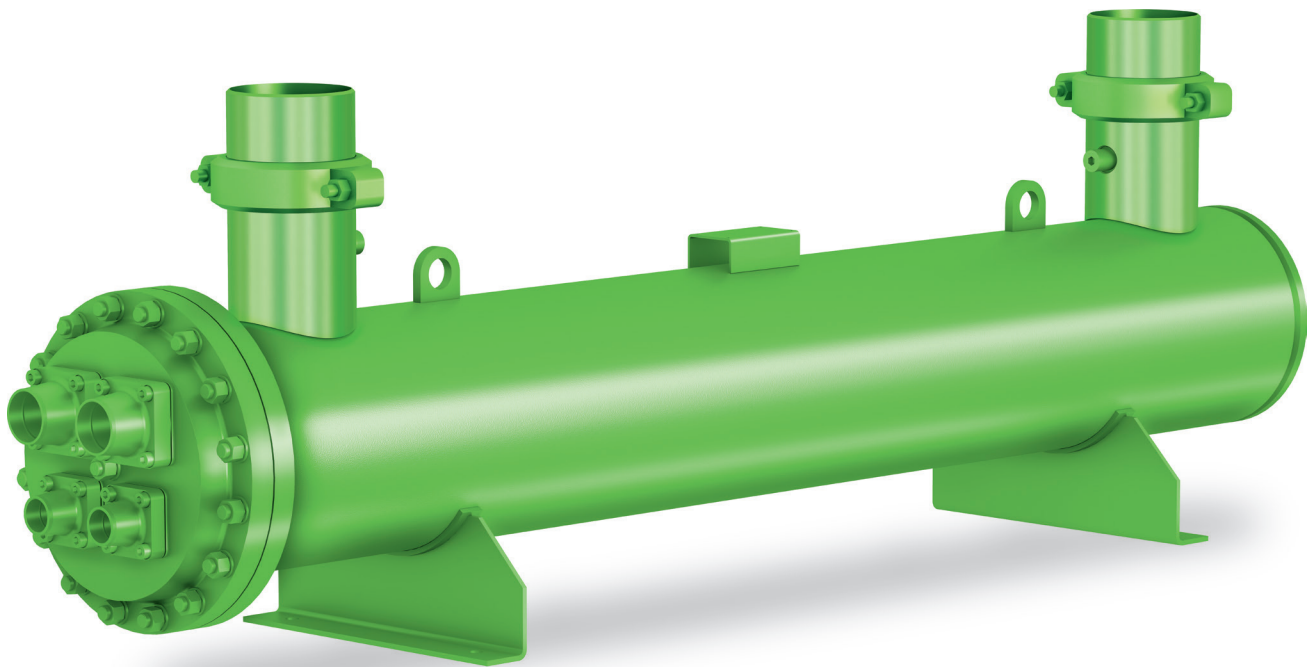
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## Shell-and-tube dry expansion evaporators: DH Series

### Performance and features

The 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 been developed for commercial and industrial refrigeration cooling with positive evaporation temperature, typically 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, the DH shell-and-tube evaporator series guarantees maximum efficiency, low cost and compactness. The DH exchange tubes have a specific inner grooved pattern to maximize the heat transfer coefficient and to limit the pressure drop negative effects.





Design data  
PED (CE) approval

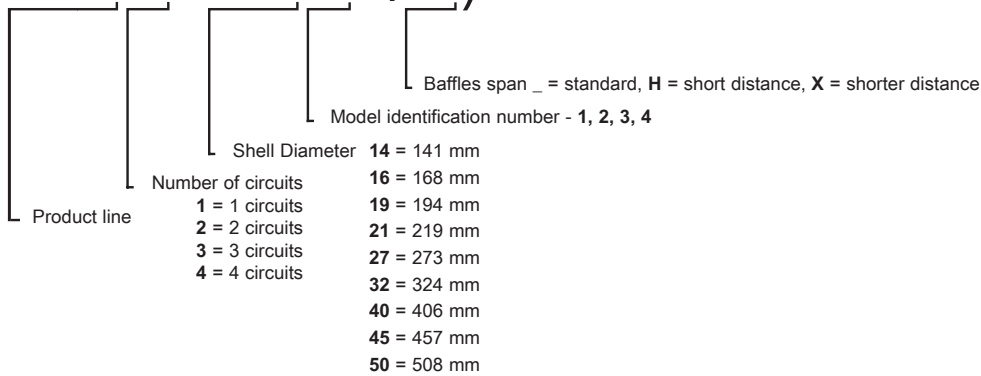
Version	Tube side				Shell side			
	PS (bar)	TS max (°C)	TS min (°C)	TP (bar)	PS (bar)	TS max (°C)	TS min (°C)	TP (bar)
STD	30	90	-10	42,9	10	90	-10	14,3
HP	45	90	-10	64,4	10	90	-10	14,3

STD Standard version // PS Maximum allowable pressure // TS max Maximum allowable temperature // TS min Minimum allowable temperature // TP Test Pressure

DH special version with Tmin = -40°C is available on demand. Please refer to BITZER for more information.

Denomination

DH2-323 (H)



In the description there may also be a letter indicating the water connections orientation. There are three available orientations: 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 refer to BITZER for more information.

**Tubes:** copper-nickel 90/10 alloy, stainless steel AISI316L, carbon steel

**Baffles:** carbon steel, stainless steel AISI316L

**Tubes sheet:** stainless steel AISI316L

**Shell and water connections:** stainless steel AISI316L



## 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<sub>in\_brine</sub>** = 12°C

**T<sub>out\_brine</sub>** = 7°C ( 8°C for DH\_-141, DH\_-142 )

**T<sub>evap\_dew</sub>** = 2,75°C

**T<sub>cond\_dew</sub>** = 45,26°C

**SC** = 3K

**SH** = 5K

DH Model	Q <sub>nom</sub> [kW]	DP <sub>nom</sub> [kPa]	W <sub>nom</sub> [m <sup>3</sup> /h]	W <sub>max</sub> [m <sup>3</sup> /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<sub>nom</sub>:** Nominal cooling capacity

**DP<sub>nom</sub>:** Nominal water pressure drop

**W<sub>nom</sub>:** Nominal water flow

**W<sub>max</sub>:** Maximum allowable water flow

### Note

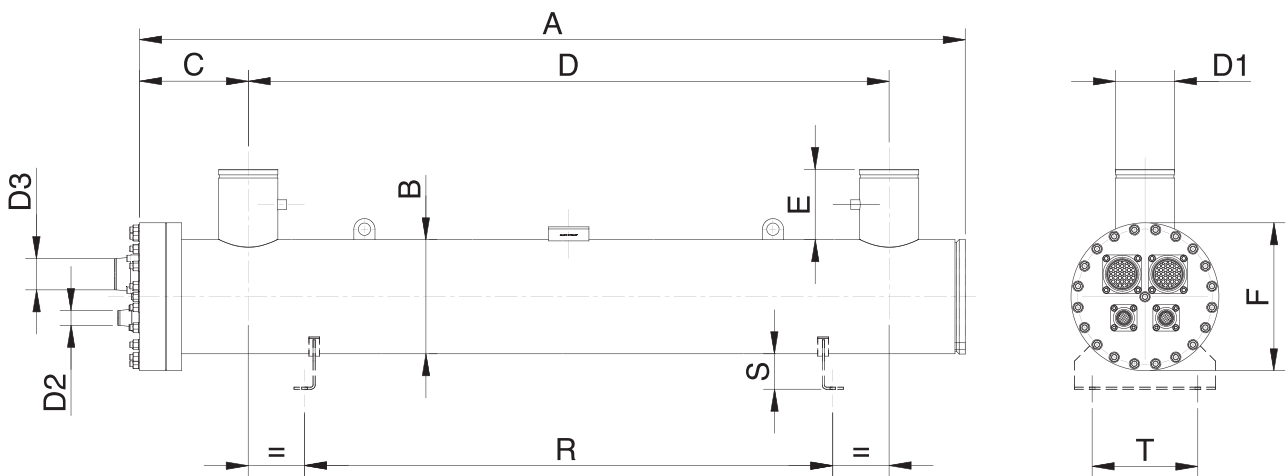
The maximum allowable flow for version with reduced distance of baffles ( H and X versions ) are different from the one in chart above. Please make reference to shell and tube thermal selection software for maximum admissible flow of H and X versions.

## General dimensions

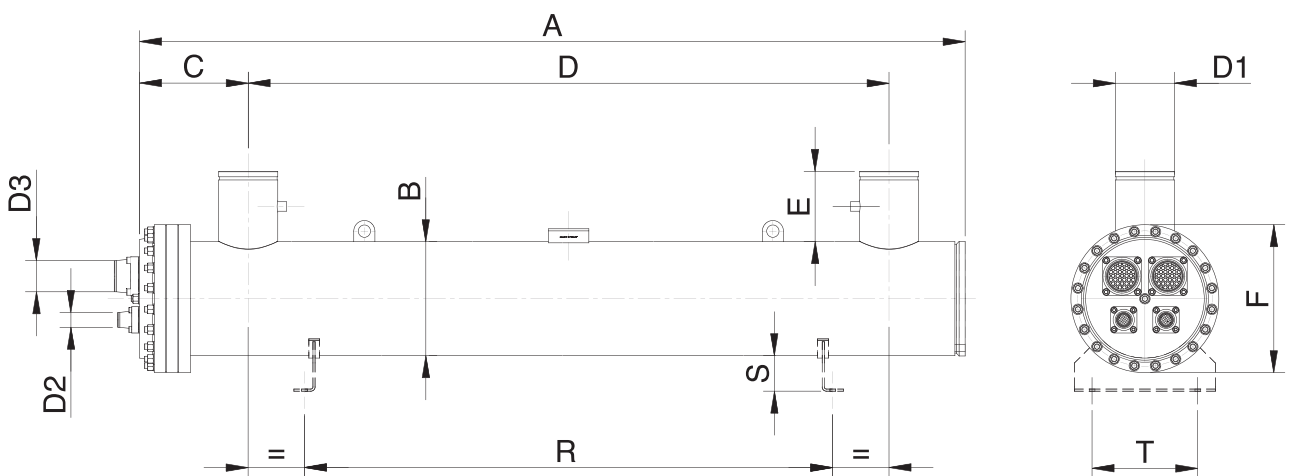
DH standard version is 'not extractable tube bundle' one. This means that the tube bundle is welded to the shell so the copper tubes can't be removed from it.

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

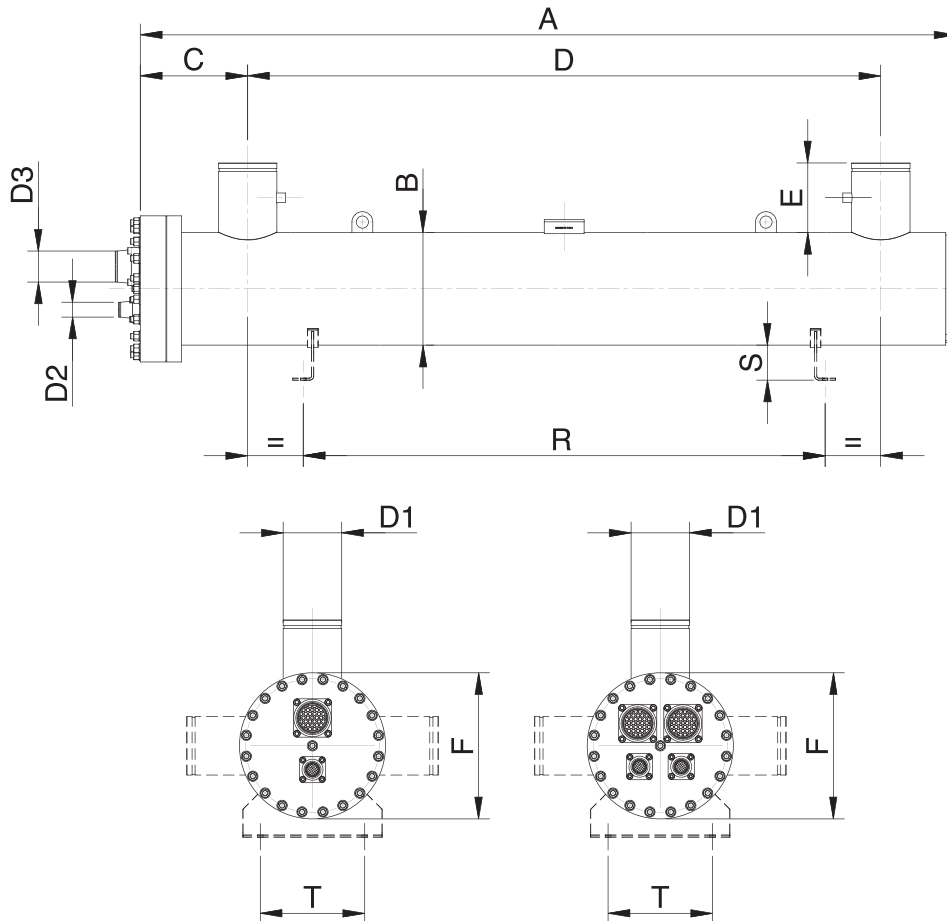


### DH extractable version



Shell diameter = 141 mm

General dimensions

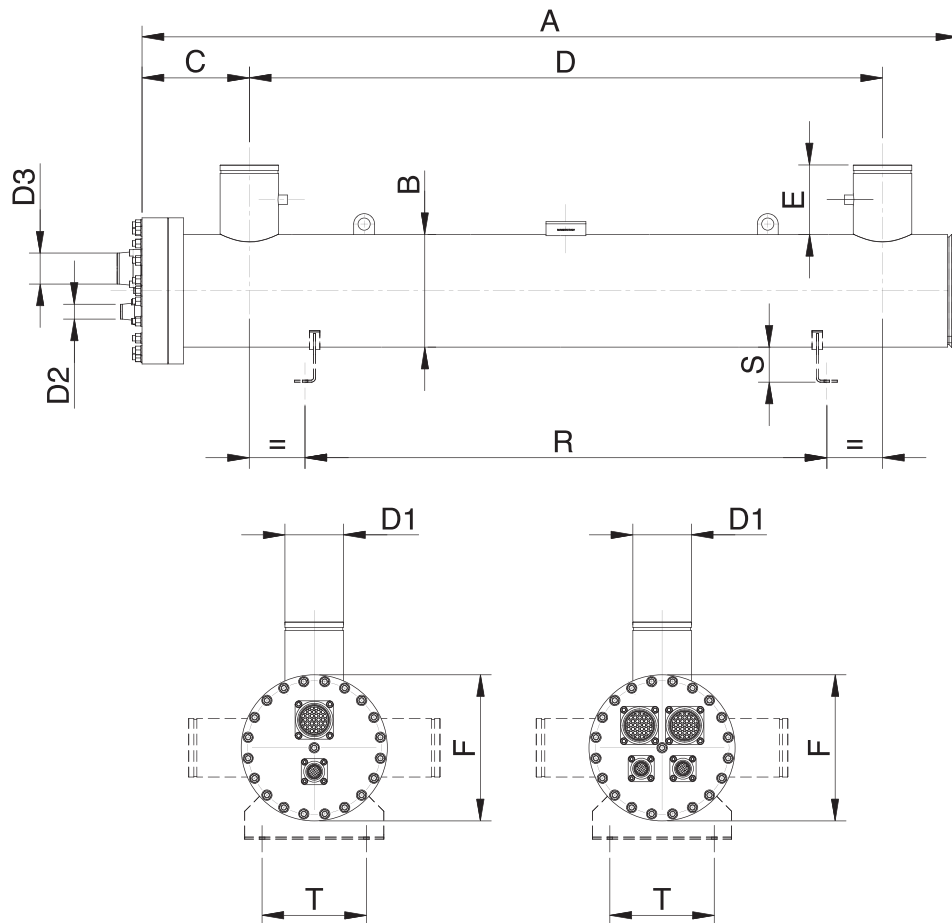


DH Model	Dimensions						Supports			Connections			Volumes - Weights				
	A	B	C	D	E	F	R	T	S	Ref-in Conn	Ref-out Conn	Water Conn	Weight	Vol tube side	Cat tube side	Vol shell side	Cat shell side
	mm	mm	mm	mm	mm	mm	mm	mm	mm	D2	D3	D1	kg	l	l	l	l
DH1-141	905	141,3	137	690	130	195	550	160	60	RB22	RC35	T11	34	3,9	l	7,6	art 3,3
DH1-142	1065	141,3	137	840	130	195	650	160	60	RB22	RC35	T11	38	4,6	l	9,0	
DH1-143	1265	141,3	143	1040	130	195	800	160	60	RB22	RC35	T2	43	5,5	l	10,8	
DH2-143	1265	141,3	143	1040	130	195	800	160	60	RA16	RC28	T2	43	5,5	l	10,8	
DH1-144	1415	141,3	143	1190	130	195	950	160	60	RB22	RC35	T2	47	6,2	l	12,1	
DH2-144	1415	141,3	143	1190	130	195	950	160	60	RA16	RC28	T2	47	6,2	l	12,1	



Shell diameter = 168 mm

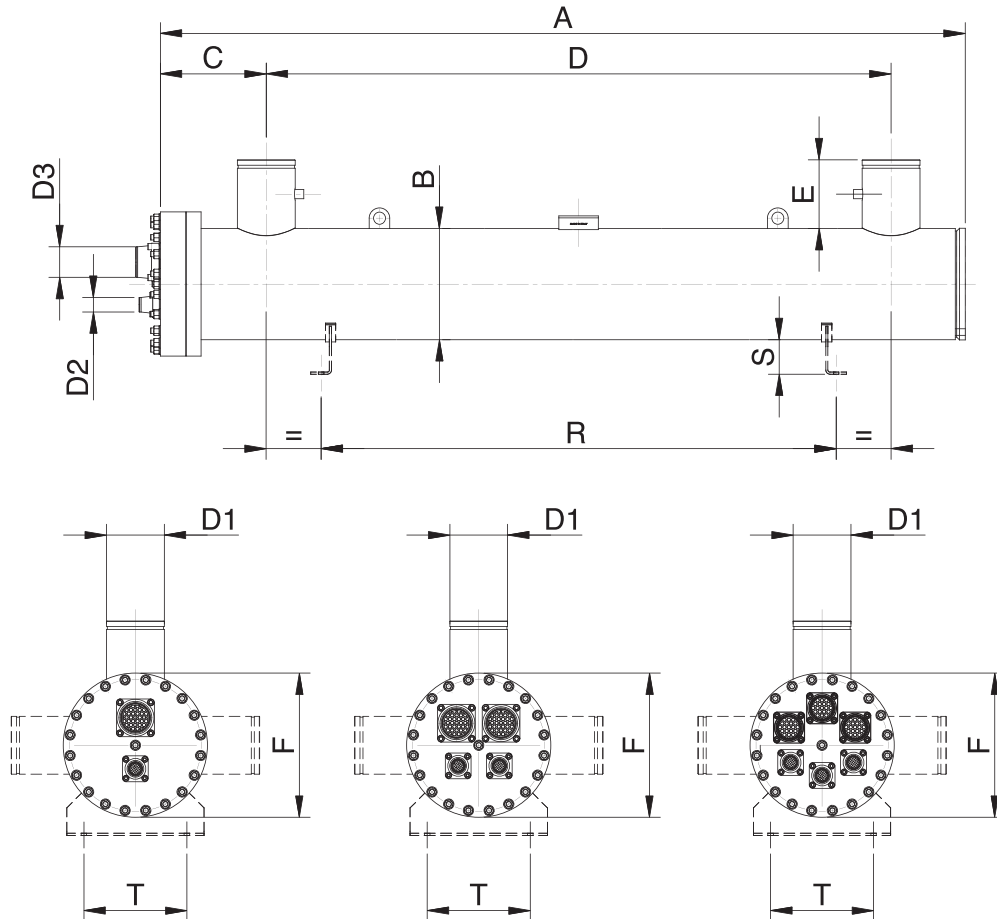
General dimensions



DH Model	Dimensions								Supports			Connections			Volumes - Weights				
	A	A (extr.)	B	C	C (extr.)	D	E	F	R	T	S	Ref-in Conn	Ref-out Conn	Water Conn	Weight	Vol tube side	Cat tube side	Vol shell side	Cat shell side
	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	D2	D3	D1	kg	l	l	l	l
DH1-161	1285	1297	168,3	151	161	1030	130	230	800	160	60	RB22	FC-B54	T21	58	7,7	II	16,6	art 3,3
DH2-161	1285	1297	168,3	151	161	1030	130	230	800	160	60	RB22	RC35	T21	58	7,6	II	16,6	
DH1-162	1435	1447	168,3	151	161	1180	130	230	950	160	60	RB22	FC-B54	T21	62	8,6	II	18,5	
DH2-162	1435	1447	168,3	151	161	1180	130	230	950	160	60	RB22	RC35	T21	62	8,5	II	18,5	
DH1-163	1635	1647	168,3	151	161	1380	130	230	1100	160	60	RB22	FC-B54	T21	69	9,8	II	21,1	
DH2-163	1635	1647	168,3	151	161	1380	130	230	1100	160	60	RB22	RC35	T21	69	9,7	II	21,1	
DH1-164	1785	1797	168,3	151	161	1530	130	230	1200	160	60	RB22	FC-B54	T21	73	10,7	II	23,0	
DH2-164	1785	1797	168,3	151	161	1530	130	230	1200	160	60	RB22	RC35	T21	74	10,6	II	24,4	

Shell diameter = 194 mm

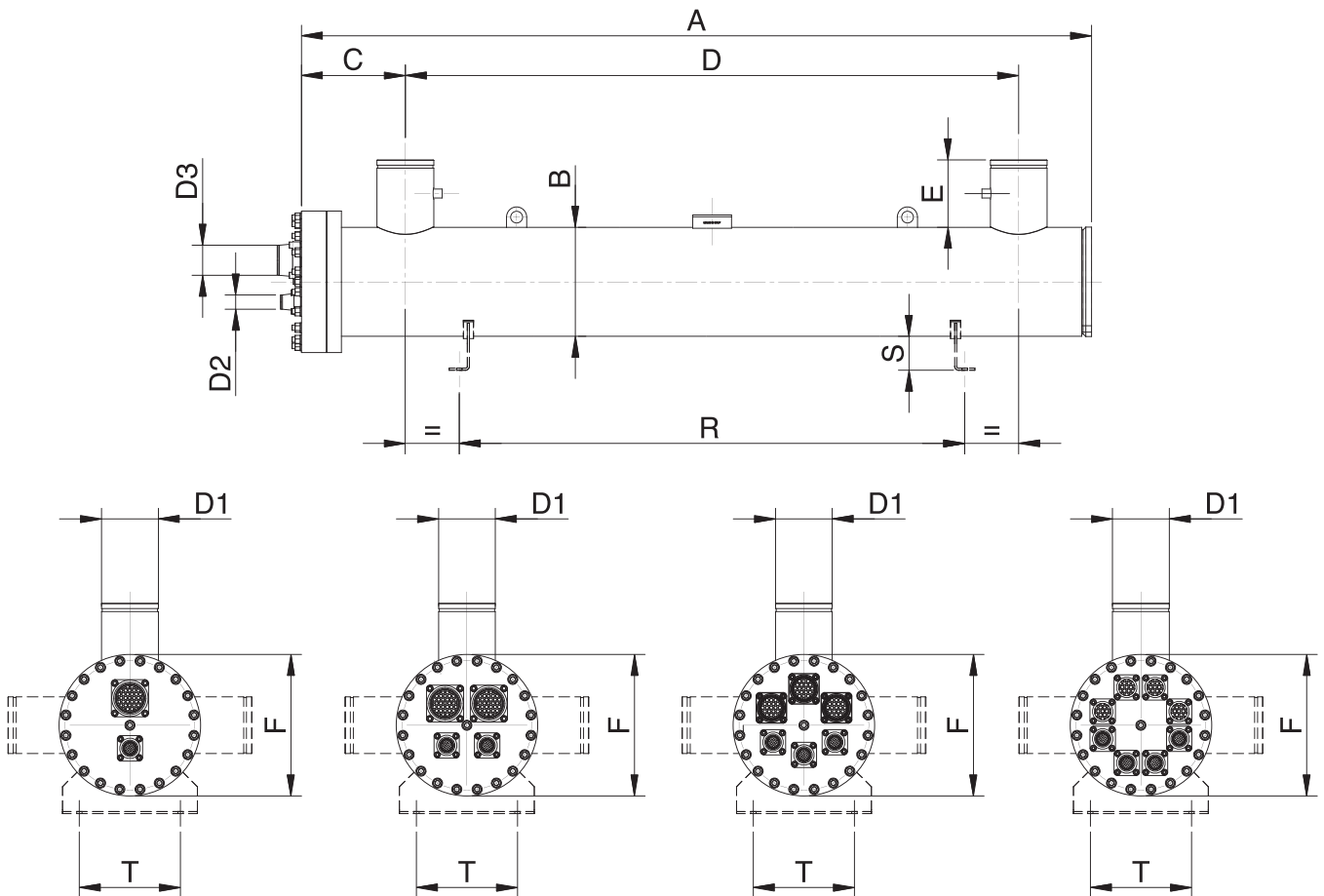
General dimensions



DH Model	Dimensions								Supports			Connections			Volumes - Weights				
	A	A (extr.)	B	C	C (extr.)	D	E	F	R	T	S	Ref-in Conn	Ref-out Conn	Water Conn	Weight	Vol tube side	Cat tube side	Vol shell side	Cat shell side
	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	D2	D3	D1	kg	l	l	l	l
DH1-191	1476	1487	193,7	212	212	1160	130	260	800	160	60	FC-A35	FC-B67	J3	79	11,1	II	26,5	art 3,3
DH2-191	1476	1487	193,7	212	212	1160	130	260	800	160	60	RB22	FC-A42	J3	79	11,0	II	26,5	
DH3-191	1476	1487	193,7	212	212	1160	130	230	800	160	60	WA22	WA35	J3	79	11,0	II	26,5	
DH1-192	1609	1620	193,7	212	212	1290	130	230	1000	160	60	FC-A35	FC-B67	J3	84	12,1	II	28,9	
DH2-192	1609	1620	193,7	212	212	1290	130	230	1000	160	60	RB22	FC-A42	J3	84	12,0	II	28,9	
DH3-192	1609	1613	193,7	212	212	1290	130	230	1000	160	60	WA22	WA35	J3	84	12,0	II	28,9	
DH1-193	1779	1790	193,7	212	212	1460	130	230	1200	160	60	FC-A35	FC-B67	J3	90	13,4	II	31,9	
DH2-193	1779	1790	193,7	212	212	1460	130	230	1200	160	60	RB22	FC-A42	J3	90	13,3	II	31,9	
DH3-193	1779	1783	193,7	212	212	1460	130	230	1200	160	60	WA22	WA35	J3	90	13,2	II	31,9	

Shell diameter = 219 mm

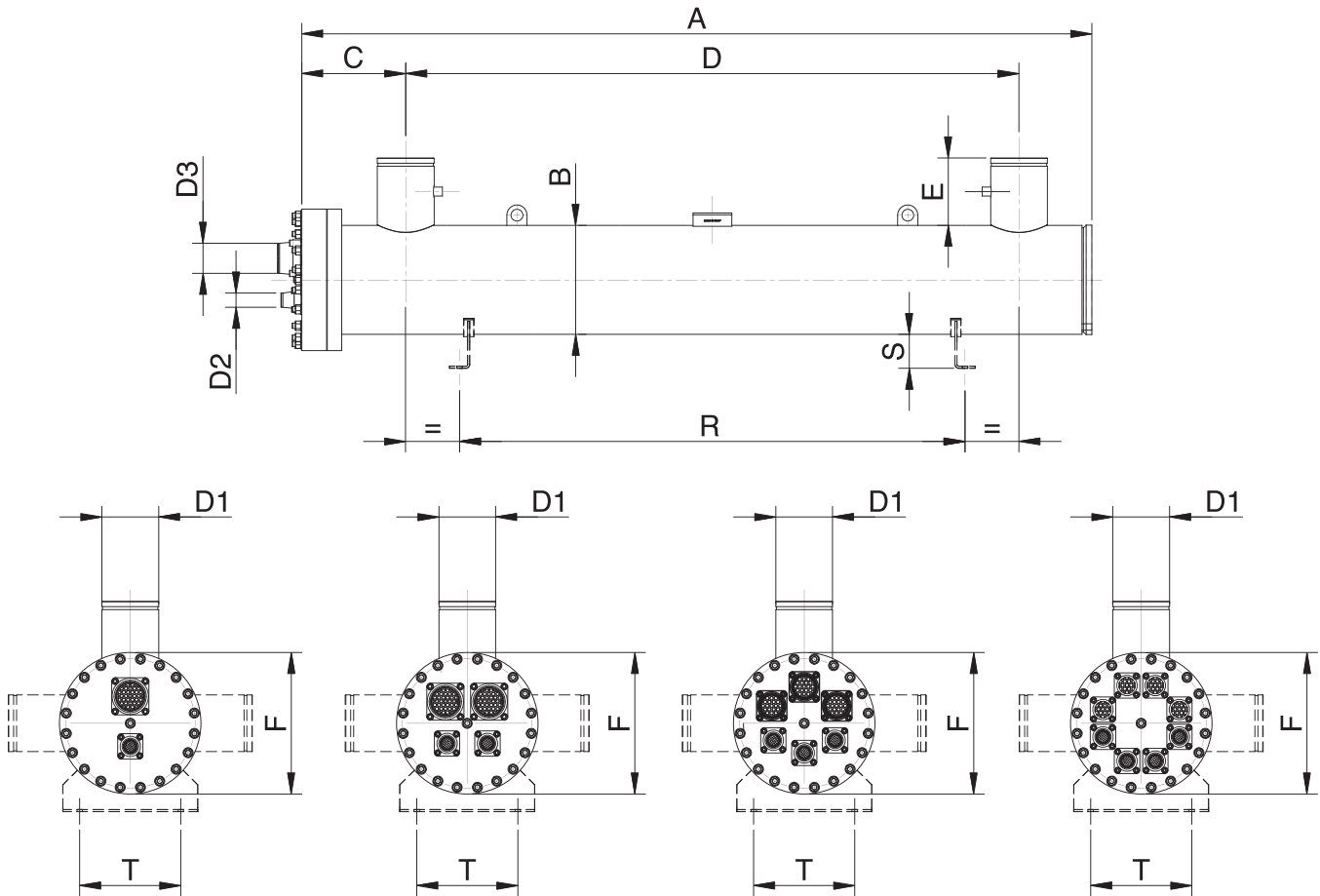
General dimensions



DH Model	Dimensions								Supports			Connections			Volumes - Weights				
	A	A (extr.)	B	C	C (extr.)	D	E	F	R	T	S	Ref-in Conn	Ref-out Conn	Water Conn	Weight	Vol tube side	Cat tube side	Vol shell side	Cat shell side
	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	D2	D3	D1	kg	l	l	l	l
DH1-211	1826	1835	219,1	239	235	1460	150	290	1200	260	80	FC-A35	FC-B67	J4	113	17,8	II	43,1	art 3,3
DH2-211	1826	1835	219,1	239	235	1460	150	290	1200	260	80	RC35	FC-A54	J4	113	17,8	II	43,1	
DH3-211	1826	1826	219,1	239	235	1460	150	290	1200	260	80	WA22	WA42	J4	113	17,7	II	43,1	
DH4-211	1826	1826	219,1	239	235	1460	150	290	1200	260	80	WA22	WA35	J4	113	17,6	II	43,1	
DH1-212	2036	2045	219,1	239	235	1670	150	290	1400	260	80	FC-A35	FC-B67	J4	123	20,0	II	47,7	
DH2-212	2036	2045	219,1	239	235	1670	150	290	1400	260	80	RC35	FC-A54	J4	123	20,0	II	47,7	
DH3-212	2036	2036	219,1	239	235	1670	150	290	1400	260	80	WA22	WA42	J4	123	19,9	II	47,7	
DH4-212	2036	2036	219,1	239	235	1670	150	290	1400	260	80	WA22	WA35	J4	123	19,9	II	47,7	

Shell diameter = 273 mm

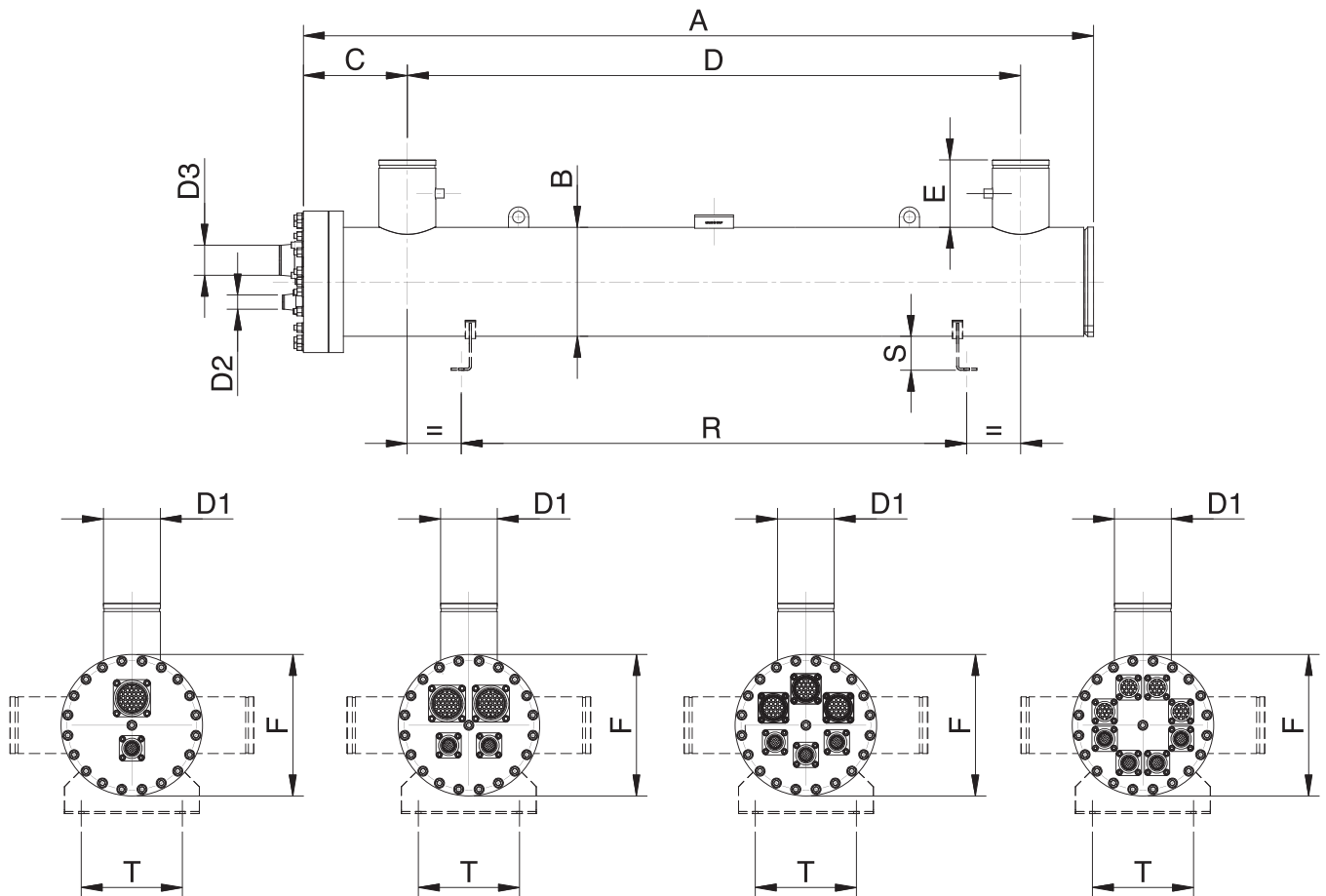
General dimensions



DH Model	Dimensions								Supports			Connections			Volumes - Weights				
	A	A (extr.)	B	C	C (extr.)	D	E	F	R	T	S	Ref-in Conn	Ref-out Conn	Water Conn	Weight	Vol tube side	Cat tube side	Vol shell side	Cat shell side
	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	D2	D3	D1	kg	l	l	l	l
DH1-271	2009	2025	273	267	262	1590	150	350	1300	300	100	FC-A35	FC-C80	J5	188	26,0	II	77,4	art 3,3
DH2-271	2009	2025	273	267	262	1590	150	350	1300	300	100	FC-A35	FC-B54	J5	188	25,9	II	77,4	
DH3-271	2009	2013	273	267	262	1590	150	350	1300	300	100	WA35	WA54	J5	188	25,9	II	77,4	
DH4-271	2009	2013	273	267	262	1590	150	350	1300	300	100	WA22	WA42	J5	189	25,7	II	77,4	
DH1-272	2009	2025	273	267	262	1590	150	350	1300	300	100	FC-A35	FC-C80	J5	196	29,2	II	73,4	
DH2-272	2009	2025	273	267	262	1590	150	350	1300	300	100	FC-A35	FC-B54	J5	196	29,1	II	73,4	
DH3-272	2009	2013	273	267	262	1590	150	350	1300	300	100	WA35	WA54	J5	195	29,1	II	73,4	
DH4-272	2009	2013	273	267	262	1590	150	350	1300	300	100	WA22	WA42	J5	196	28,9	II	73,4	
DH1-273	2009	2025	273	267	262	1590	150	350	1300	300	100	FC-A35	FC-C80	J5	204	33,0	II	68,8	
DH2-273	2009	2025	273	267	262	1590	150	350	1300	300	100	FC-A35	FC-B54	J5	204	32,9	II	68,8	
DH3-273	2009	2013	273	267	262	1590	150	350	1300	300	100	WA35	WA54	J5	203	32,9	II	68,8	
DH4-273	2009	2013	273	267	262	1590	150	350	1300	300	100	WA22	WA42	J5	204	32,7	II	68,8	

Shell diameter = 324 mm

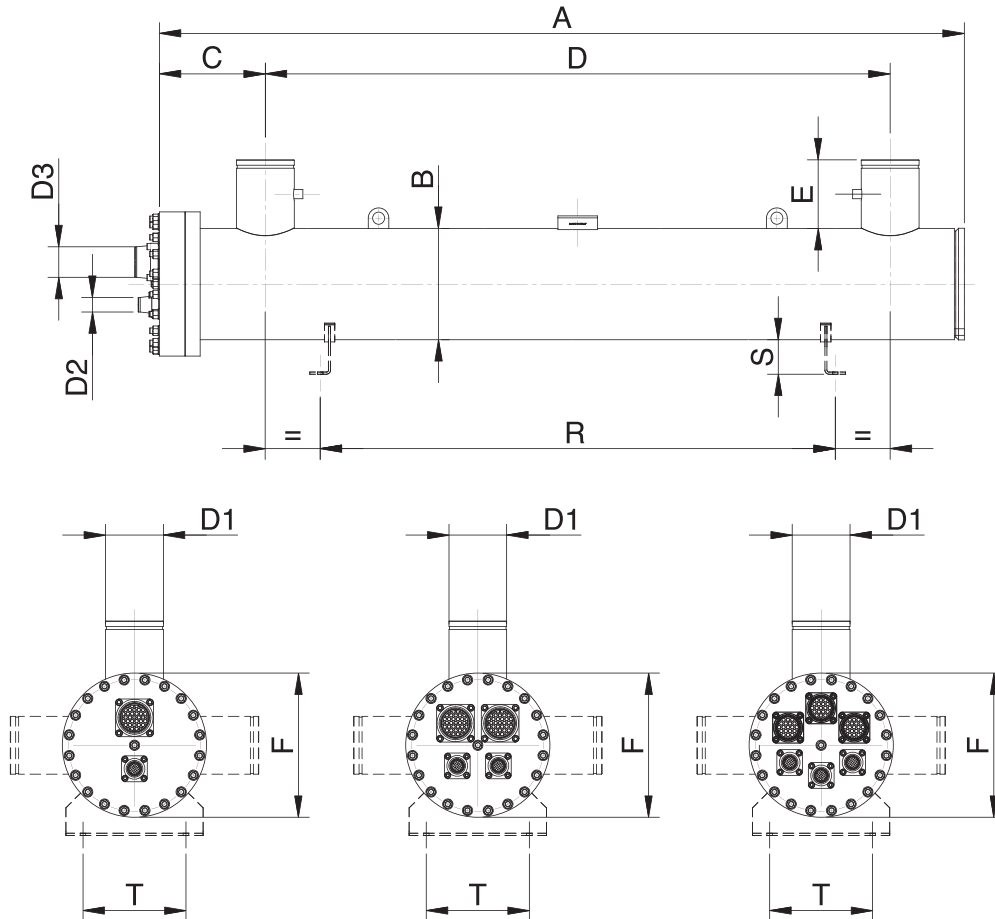
General dimensions



DH Model	Dimensions								Supports			Connections			Volumes - Weights				
	A	A (extr.)	B	C	C (extr.)	D	E	F	R	T	S	Ref-in Conn	Ref-out Conn	Water Conn	Weight	Vol tube side	Cat tube side	Vol shell side	Cat shell side
	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	D2	D3	D1	kg	l	III	l	
DH1-321	2323	2344	323,9	299	293	1820	200	400	1500	300	100	FC-A35	FC-C80	J6	285	43,5	III	127,6	art 3,3
DH2-321	2323	2344	323,9	299	293	1820	200	400	1500	300	100	FC-A35	FC-C80	J6	284	43,6	III	127,6	
DH3-321	2323	2332	323,9	299	293	1820	200	400	1500	300	100	FC-A35	FC-B67	J6	284	43,5	III	127,6	
DH4-321	2323	2332	323,9	299	293	1820	200	400	1500	300	100	FC-A35	FC-A54	J6	284	43,4	III	127,6	
DH1-322	2323	2344	323,9	299	293	1820	200	400	1500	300	100	FC-A35	FC-C80	J6	292	49,0	III	121,5	
DH2-322	2323	2344	323,9	299	293	1820	200	400	1500	300	100	FC-A35	FC-C80	J6	291	49,1	III	121,5	
DH3-322	2323	2332	323,9	299	293	1820	200	400	1500	300	100	FC-A35	FC-B67	J6	291	49,0	III	121,5	
DH4-322	2323	2332	323,9	299	293	1820	200	400	1500	300	100	FC-A35	FC-A54	J6	291	48,9	III	121,5	
DH1-323	2323	2344	323,9	299	293	1820	200	400	1500	300	100	FC-A35	FC-C80	J6	315	57,0	III	111,0	
DH2-323	2323	2344	323,9	299	293	1820	200	400	1500	300	100	FC-A35	FC-C80	J6	314	57,1	III	111,0	
DH3-323	2323	2332	323,9	299	293	1820	200	400	1500	300	100	FC-A35	FC-B67	J6	313	57,1	III	111,0	
DH4-323	2323	2332	323,9	299	293	1820	200	400	1500	300	100	FC-A35	FC-A54	J6	314	57,0	III	111,0	

Shell diameter = 406 mm

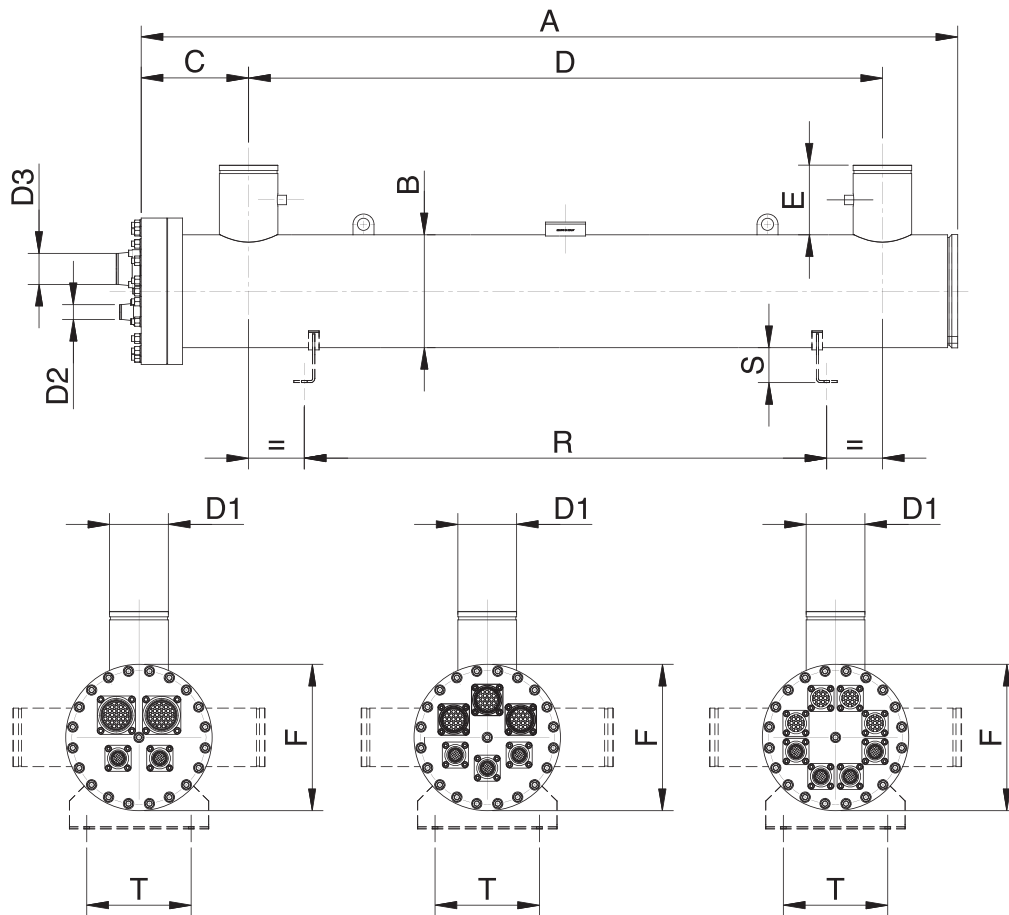
General dimensions



DH Model	Dimensions								Supports			Connections			Volumes - Weights				
	A	A (extr.)	B	C	C (extr.)	D	E	F	R	T	S	Ref-in Conn	Ref-out Conn	Water Conn	Weight	Vol tube side	Cat tube side	Vol shell side	Cat shell side
	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	D2	D3	D1	kg	l		l	
DH2-401	2230	2265	406,4	338	338	1660	200	490	1400	400	120	FC-A35	FC-C80	J8	415	66,4	III	195,6	
DH3-401	2230	2254	406,4	338	338	1660	200	490	1400	400	120	FC-A35	FC-C80	J8	414	66,5	III	195,6	
DH4-401	2230	2254	406,4	338	338	1660	200	490	1400	400	120	FC-A35	FC-B67	J8	414	66,4	III	195,6	
DH2-402	2230	2265	406,4	338	338	1660	200	490	1400	400	120	FC-A35	FC-C80	J8	433	74,4	III	185,7	
DH3-402	2230	2254	406,4	338	338	1660	200	490	1400	400	120	FC-A35	FC-C80	J8	432	74,5	III	185,7	
DH4-402	2230	2254	406,4	338	338	1660	200	490	1400	400	120	FC-A35	FC-B67	J8	432	74,4	III	185,7	art
DH2-403	2230	2265	406,4	338	338	1660	200	490	1400	400	120	FC-A35	FC-C80	J8	462	88,3	III	168,8	3,3
DH3-403	2230	2254	406,4	338	338	1660	200	490	1400	400	120	FC-A35	FC-C80	J8	461	88,4	III	168,8	
DH4-403	2230	2254	406,4	338	338	1660	200	490	1400	400	120	FC-A35	FC-B67	J8	461	88,3	III	168,8	
DH2-404	2750	2785	406,4	338	338	2180	200	490	1800	400	120	FC-A35	FC-C80	J8	544	109,5	IV	205,9	
DH3-404	2750	2774	406,4	338	338	2180	200	490	1800	400	120	FC-A35	FC-C80	J8	543	109,6	IV	205,9	
DH4-404	2750	2774	406,4	338	338	2180	200	490	1800	400	120	FC-A35	FC-B67	J8	543	109,5	IV	205,9	

Shell diameter = 457 mm

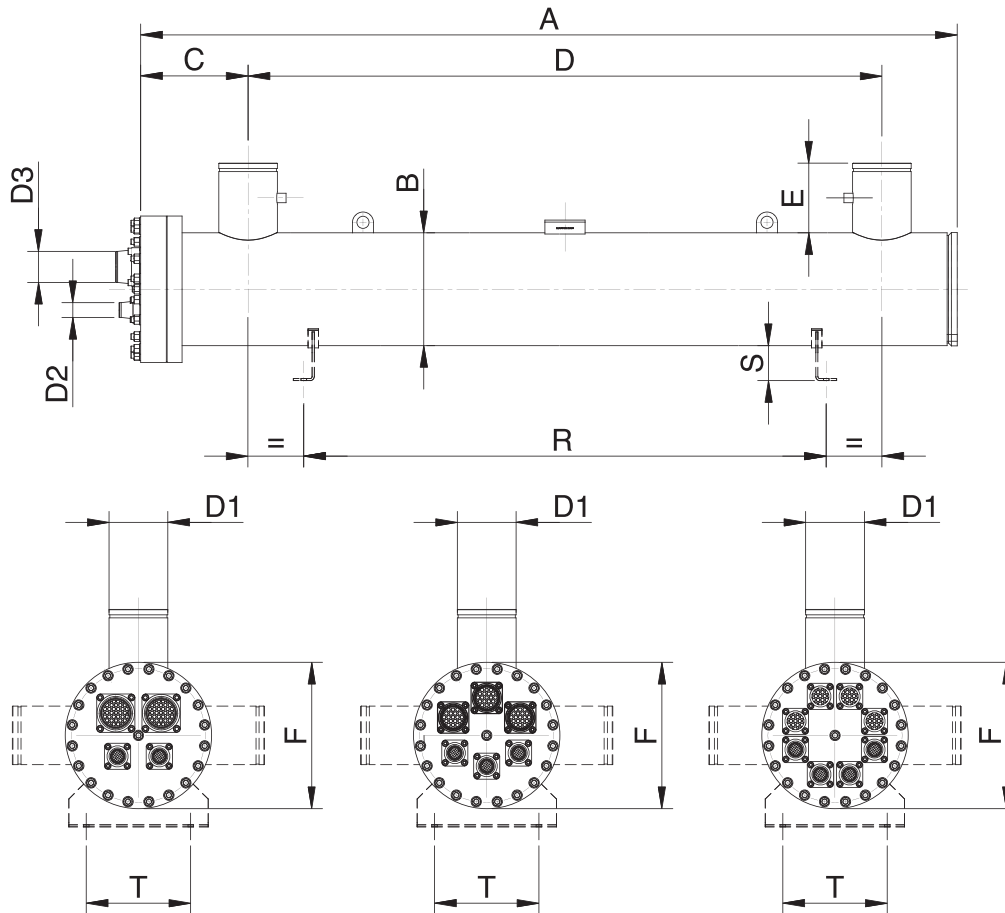
General dimensions



DH Model	Dimensions								Supports			Connections			Volumes - Weights				
	A	A (extr.)	B	C	C (extr.)	D	E	F	R	T	S	Ref-in Conn	Ref-out Conn	Water Conn	Weight	Vol tube side	Cat tube side	Vol shell side	Cat shell side
	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	D2	D3	D1	kg	l	IV	l	
DH2-451	2390	2420	457	373	368	1760	200	550	1500	310	121	FC-A35	FC-C80	J8	602	110,9	IV	235,1	art 3,3
DH3-451	2390	2404	457	373	368	1760	200	550	1500	310	121	FC-A35	FC-C80	J8	600	110,9	IV	235,1	
DH4-451	2390	2404	457	373	368	1760	200	550	1500	310	121	FC-A35	FC-B67	J8	600	110,8	IV	235,1	
DH2-452	2390	2420	457	373	368	1760	200	550	1500	310	121	FC-A35	FC-C80	J8	632	124,5	IV	218,2	
DH3-452	2390	2404	457	373	368	1760	200	550	1500	310	121	FC-A35	FC-C80	J8	631	124,6	IV	218,2	
DH4-452	2390	2404	457	373	368	1760	200	550	1500	310	121	FC-A35	FC-B67	J8	631	124,5	IV	218,2	

Shell diameter = 508 mm

General dimensions



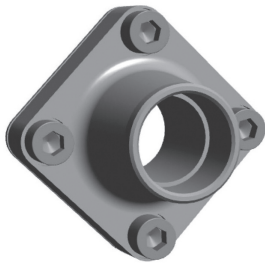
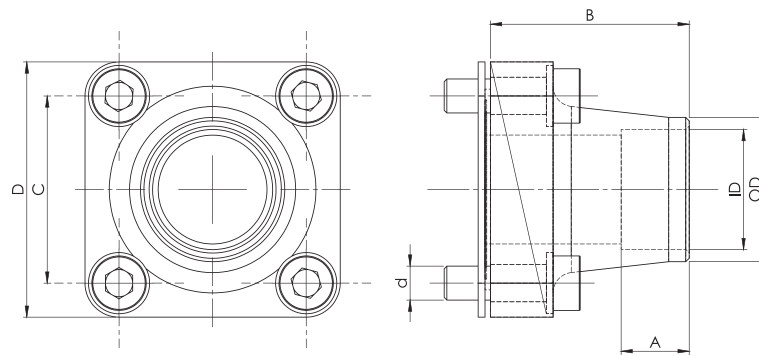
DH Model	Dimensions								Supports			Connections			Volumes - Weights				
	A	A (extr.)	B	C	C (extr.)	D	E	F	R	T	S	Ref-in Conn	Ref-out Conn	Water Conn	Weight	Vol tube side	Cat tube side	Vol shell side	Cat shell side
	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	D2	D3	D1	kg	l	l	l	l
DH2-501	2820	2850	508	398	393	2140	250	600	1800	350	120	FC-A42	FC-C80	J10	777	141,3	IV	378,7	art 3,3
DH3-501	2820	2834	508	398	393	2140	250	600	1800	350	120	FC-A35	FC-C80	J10	776	141,4	IV	378,7	
DH4-501	2820	2834	508	398	393	2140	250	600	1800	350	120	FC-A35	FC-B67	J10	776	141,3	IV	378,7	
DH2-502	2820	2850	508	398	393	2140	250	600	1800	350	120	FC-A42	FC-C80	J10	832	165,8	IV	348,5	
DH3-502	2820	2834	508	398	393	2140	250	600	1800	350	120	FC-A35	FC-C80	J10	830	165,8	IV	348,5	
DH4-502	2820	2834	508	398	393	2140	250	600	1800	350	120	FC-A35	FC-B67	J10	830	165,7	IV	348,5	



## 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.

### General dimensions

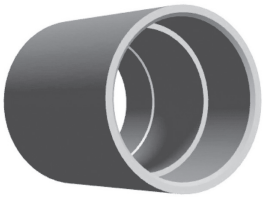
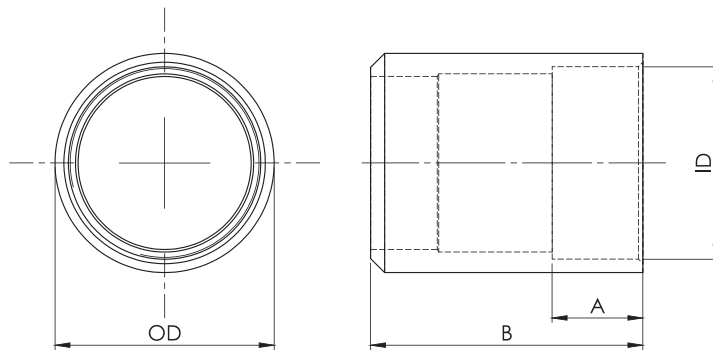


Flange connections										
Type	A mm	B mm	C mm	D mm	d mm	Name	Tube ODS (mm)	Connection		
								ODS (Inch)	Material	ID (mm)
A	20	60	55	75	M10	FC-A35	35	1 3/8"	Copper	35,3
	20	60	55	75	M10	FC-A42	42	1 5/8"	Copper	42,4
	20	60	55	75	M10	FC-A54	54	2 1/8"	Copper	54,4
B	20	70	70	90	M10	FC-B54	54	2 1/8"	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

## Refrigerant connections

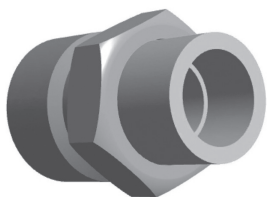
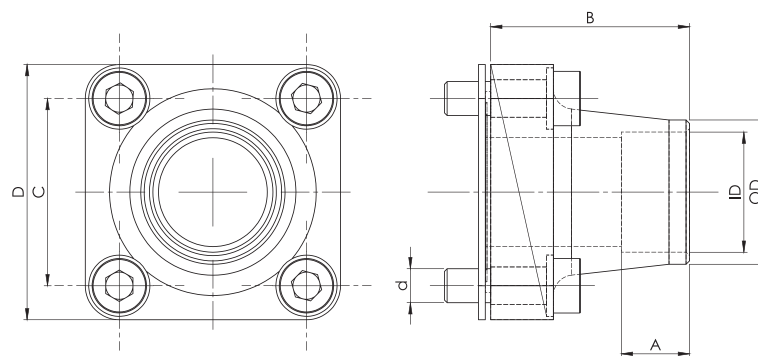
The connection between the evaporator and the refrigerant circuit is made, depending on the evaporator size, with flange connections, welding connections or Rotalock connections.

### General dimensions



Welding connections						
Type	A mm	B mm	Name	Connection		
				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

### General dimensions



Rotalock connections									
Type	A mm	B mm	C mm	RT	Name	Connection			
						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	

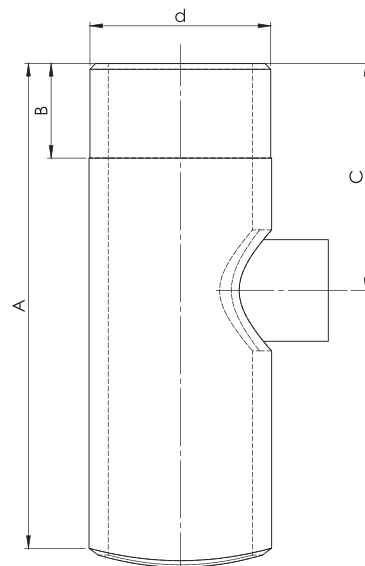
## Brine connections

Different connections are available, depending on the evaporator size:

- // with UNI/ISO 7/1 R thread up to 2 1/2"
- // 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.

## General dimensions

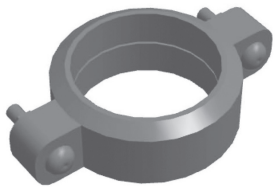
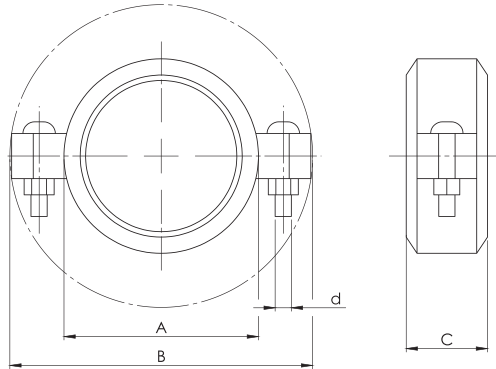


Threaded water connections					
Type	A mm	B mm	C mm	Name	d inch
DH 141-142	130	25	60	T11	1 1/2"
DH 143-144	130	25	60	T2	2"
DH 161-162-163-164	130	35	60	T21	2 1/2"

## Brine connections

### General dimensions

Flexible joint

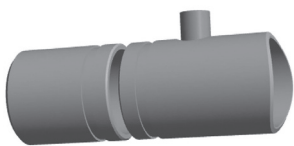
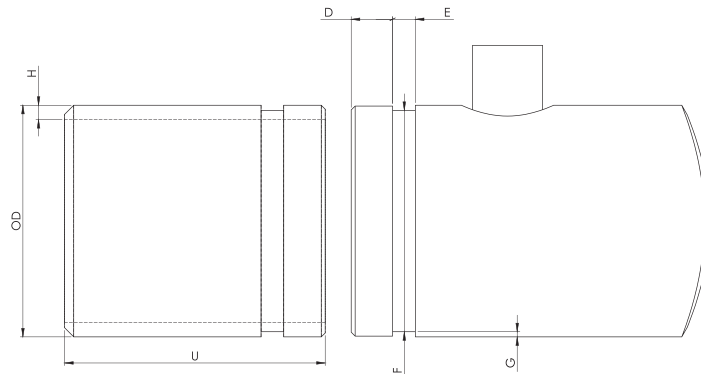


Victaulic flexible joint water connections

Type	A mm	B mm	C mm	Name	OD mm	DN
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")

### General dimensions

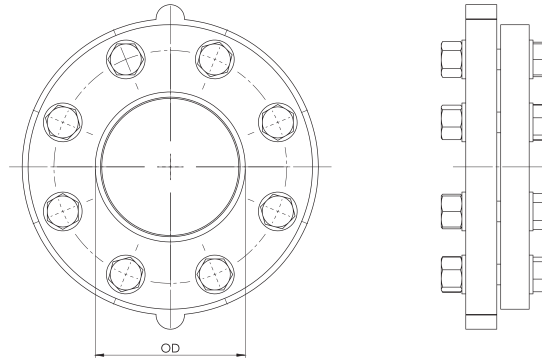
Connection pipe



Victaulic flexible joint water connections

Type	DN	D mm	E mm	F mm	G 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

### General dimensions



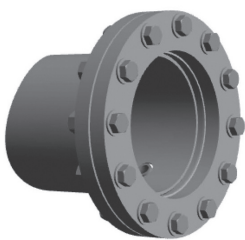
### Vic-Flange water connections

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

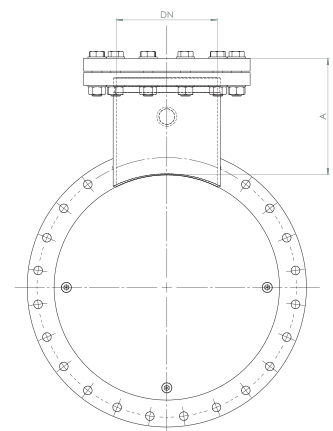
- // Vic-Flange adapter ( see picture below ) with gasket
- // Carbon steel counter flange according to EN 1092-1

### General dimensions

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

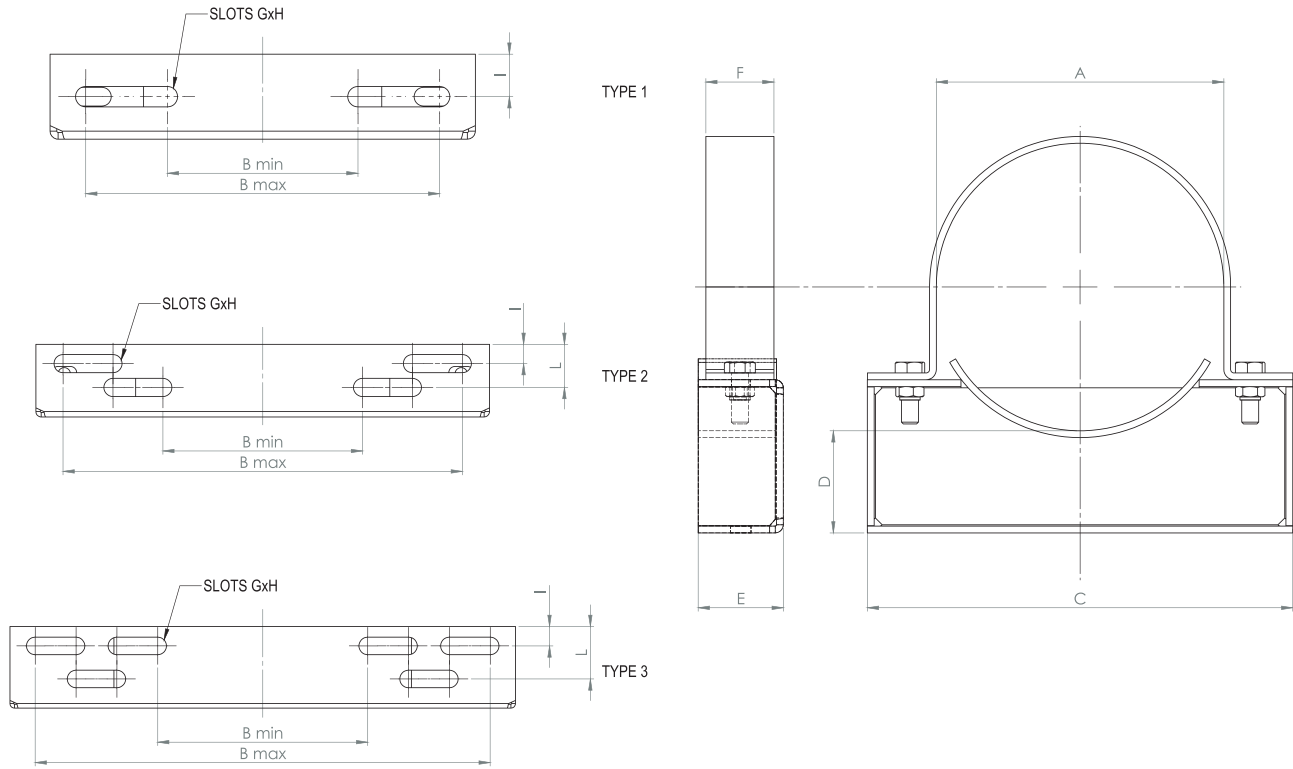


Welded flange water connections		
Type	DN mm	A
DH 141-142	40	130
DH 143-144	50	130
DH 161-162-163-164	65	130
DH 191-192-193	80	165
DH 211-212	100	165
DH 271-272-273	125	165
DH 321-322-323	150	215
DH 401-402-403-404-451-452	200	215
DH 501-502	250	265



## Options

### General dimensions



## Options

The following options are available for DH evaporator:

- // Vic-flanges water connections ( see 'Brine connections' section for more details )
- // Insulation ( thickness  $\frac{3}{4}$ " ) 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: The 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.



DH Operators											
A	B		C	D	E	F	G	Slots		i	L
	min	max						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	60	50	16	60	3	20	54



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The products can deviate in colour from the shown product pictures. // Subject to change // 80192701 // 11.2018