

Brazed Plate Heat Exchanger



VAU Thermotech GmbH & Co. KG



About us

VAU Thermotech GmbH & Co. KG is an independent and owner-managed company. The traditional metal company, which was formerly known as VAU Werkzeug- und Gerätebau GmbH & Co. KG since 1977, learned a complete realignment in 2008 as plate heat exchanger company. Decades of expertise in this specialized area found its way in VAU Thermotech GmbH & Co. KG. As one of the few German specialists for plate heat exchangers VAU Thermotech GmbH & Co. KG commits to self and in Germany made products.

The company invested several million of euros in the latest machinery and systems. Among other things a new vacuum brazing furnace was purchased which is the most advanced on the market and allows an increase in the production rate. The high-tech furnace can braze up to 3,500 kg of material per batch which enables a production period of ten to twelve hours. Goods that are not in stock can be produced nearly overnight to ensure short delivery times within 24 hours.

The main investment has been made in the automated production system for heat exchanger plates. The new press systems ensure maximum productivity, process reliability and maximum flexibility in production. The lines with the 650 and 2000 tons hydraulic press were customized to our needs and built to our specifications.

Both brazed and welded heat exchanger plates of different sizes can be produced by this line. In addition, the press line can also be operated manually.

VAU has the most advanced production equipment for plate heat exchangers worldwide.



We are certified producer according to:

- DIN EN ISO 9001:2015
- AD 2000 HP 0 and DIN EN 13445-4 (3)
- Module A 2 acc. to Pressure Equipment Directive 2014/68/EU

Brazed Plate Heat Exchanger

Design & construction

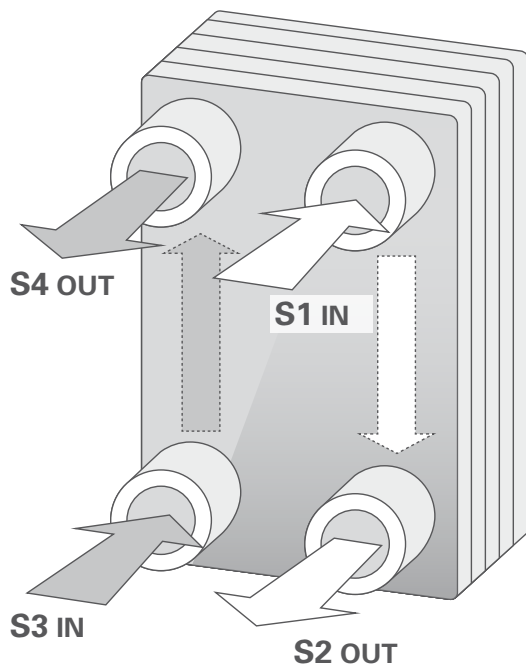
The Brazed Plate Heat Exchanger is designed to achieve the maximum transfer of heat between two media of different temperatures, without allowing the media to mix. The Brazed Plate Heat Exchanger is constructed of several layers of baffled stainless steel plates. The unique stamping pattern of the baffled plates maximizes the effectiveness of the heat transfer. The plates within a Brazed Plate Heat Exchanger are made of AISI 316L (1.4404) stainless steel, pressed and jointed to a plate pack and brazed with a 99.99% pure copper brazing agent using a vacuum oven process.

Each baffled stainless steel plate has an opening in each of the four corners. During the manufacturing process of units, every other baffled stainless steel plate is rotated 180° in order to create two distinct media chambers, or channels.

These two distinct media channels allow for the asymmetric flow of media across a multitude of intersections, created by the unique pattern of the baffled stainless steel plates, and causes high turbulence of the media flowing through the two distinct channels. The result is a high heat transfer value, as well as a significant reduction of deposits on the plates from the media flowing through the unit, as compared to a shell and tube heat exchanger.

Applications:

- District heating
- Heat Pumps
- Heating Technology
- Air Conditioning
- and many more branches of industry
- Refrigeration
- Solar Technology
- Energy recovery
- Domestic water heating



Short installation guide

Assembly:

Media with particulates and/or heavy solids are not appropriate for use with the brazed plate heat exchanger, as they will cause clogging and early failure of the unit. To avoid fatigue of the brazed joints and the potential of a failure, installations must be made in a manner to avoid pulsations and vibrations to the unit. Provision should be made for shut-offs, drainings, ventings and filters (mesh 0,6 mm).

Mounting position:

The plate heat exchangers should be installed in a vertical position to provide draining of flow channels.

Connection:

The media must flow through the device in counter flow paths.

Venting:

During initial media flow through a drained or new unit, vent valves should be open to allow all trapped air to escape from the system.

Cleaning:

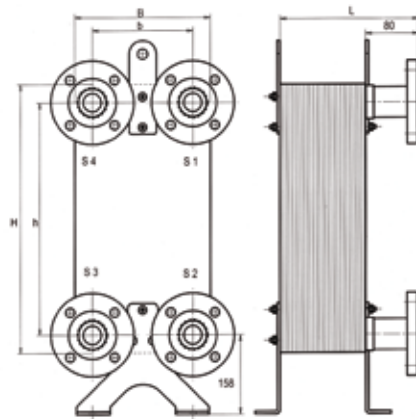
The brazed plate heat exchanger can be cleaned by flushing and back-flushing (please see table at page 8), in place, with chemical cleaners.

Technical Specifications

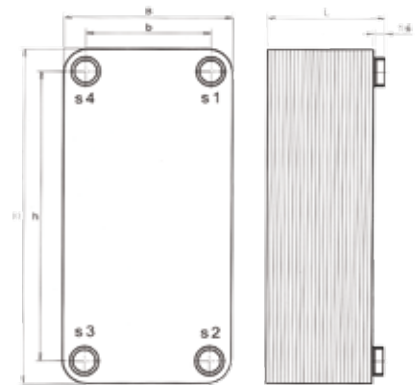
Size	Item #	Volume in Liter		Length		Width		Height		Weight kg	Port Fittings
		primary	secondary	L/mm	B/mm	b/mm	H/mm	h/mm			
VM 12/ 10	0121001	0,08	0,11	43	72	41	185	155	1,0	G 3/4	
VM 12/ 20	0122001	0,19	0,22	66	72	41	185	155	1,5		
VM 12/ 30	0123001	0,30	0,33	89	72	41	185	155	1,9		
VM 12/ 40	0124001	0,41	0,44	112	72	41	185	155	2,4		
VM 15/ 10	0151001	0,10	0,13	43	73	42	202	172	1,1	G 3/4	
VM 15/ 20	0152001	0,23	0,26	66	73	42	202	172	1,6		
VM 15/ 30	0153001	0,36	0,39	89	73	42	202	172	2,0		
VM 15/ 40	0154001	0,49	0,52	112	73	42	202	172	2,4		
VM 25/ 10	0251001	0,14	0,18	43	72	42	308	278	1,7	G 3/4	
VM 25/ 14	0251401	0,21	0,25	52	72	42	308	278	2,0		
VM 25/ 20	0252001	0,32	0,35	66	72	42	308	278	2,6		
VM 25/ 24	0252401	0,39	0,42	75	72	42	308	278	2,8		
VM 25/ 30	0253001	0,50	0,53	89	72	42	308	278	3,1		
VM 25/ 40	0254001	0,67	0,71	112	72	42	308	278	3,8		
VM 25/ 50	0255001	0,85	0,88	135	72	42	308	278	4,6		
VM 25/ 60	0256001	1,03	1,06	158	72	42	308	278	5,3		
VM 25/ 80	0258001	1,38	1,41	204	72	42	308	278	7,4		
VM 30/ 10	0301001	0,21	0,26	43	106	50	306	250	2,3		G 1
VM 30/ 14	0301401	0,31	0,36	52	106	50	306	250	2,9		
VM 30/ 20	0302001	0,47	0,52	66	106	50	306	250	3,3		
VM 30/ 24	0302401	0,57	0,62	75	106	50	306	250	3,7		
VM 30/ 30	0303001	0,73	0,78	89	106	50	306	250	4,3		
VM 30/ 40	0304001	0,99	1,04	112	106	50	306	250	5,3		
VM 30/ 50	0305001	1,25	1,30	135	106	50	306	250	6,3		
VM 30/ 60	0306001	1,51	1,56	158	106	50	306	250	7,3		
VM 30/ 80	0308001	2,03	2,08	204	106	50	306	250	8,9		
VM 30/ 100	0310001	2,55	2,60	250	106	50	306	250	10,7		
VM 55/ 10	0551001	0,47	0,59	43	106	50	520	466	5,8	G 1	
VM 55/ 14	0551401	0,71	0,83	52	106	50	520	466	6,5		
VM 55/ 20	0552001	1,06	1,18	66	106	50	520	466	7,6		
VM 55/ 24	0552401	1,30	1,42	75	106	50	520	466	8,2		
VM 55/ 30	0553001	1,65	1,77	89	106	50	520	466	9,3		
VM 55/ 40	0554001	2,24	2,36	112	106	50	520	466	11,1		
VM 55/ 50	0555001	2,83	2,95	135	106	50	520	466	12,8		
VM 55/ 60	0556001	3,42	3,54	158	106	50	520	466	14,5		
VM 55/ 80	0558001	4,60	4,72	204	106	50	520	466	18,0		
VM 55/100	0510001	5,78	5,90	250	106	50	520	466	21,5		



standard size
VM 12 to VM 60



size VM 85: flange connections DN 50 possible
size VM 200: flange connections DN 65 possible



VM 85 G2
VM 200 G 2 1/2

Size	Item #	Volume in Liter		Length L/mm	Width		Height		Weight kg	Port Fittings
		primary	secondary		B/mm	b/mm	H/mm	h/mm		
VM 60/ 10	0601001	0,50	0,63	43	124	69	532	476	6,1	G 1 ¼
VM 60/ 14	0601401	0,76	0,88	52	124	69	532	476	6,9	
VM 60/ 20	0602001	1,13	1,26	66	124	69	532	476	8,1	
VM 60/ 24	0602401	1,39	1,51	75	124	69	532	476	8,9	
VM 60/ 30	0603001	1,76	1,89	89	124	69	532	476	10,1	
VM 60/ 40	0604001	2,39	2,52	112	124	69	532	476	12,1	
VM 60/ 50	0605001	3,02	3,15	135	124	69	532	476	14,1	
VM 60/ 60	0606001	3,65	3,78	158	124	69	532	476	16,1	
VM 60/ 80	0608001	4,91	5,04	204	124	69	532	476	20,1	
VM 60/100	0610001	6,17	6,30	250	124	69	532	476	24,1	
VM 85/ 30 G2	0853001G2	3,64	3,90	85	271	198	532	460	21,4	G 2
VM 85/ 40 G2	0854001G2	4,94	5,20	106	271	198	532	460	25,7	
VM 85/ 50 G2	0855001G2	6,24	6,50	128	271	198	532	460	30,0	
VM 85/ 60 G2	0856001G2	7,54	7,80	149	271	198	532	460	34,3	
VM 85/ 80 G2	0858001G2	10,14	10,40	192	271	198	532	460	42,9	
VM 85/100 G2	0810001G2	12,74	13,00	235	271	198	532	460	51,5	
VM 85/120 G2	0812001G2	15,34	15,60	278	271	198	532	460	60,1	
VM 85/150 G2	0815001G2	19,24	19,50	343	271	198	532	460	73,0	
VM 85/180 G2	0818001G2	23,14	23,40	497	271	198	532	460	85,9	
VM 85/200 G2	0820001G2	25,74	26,00	450	271	198	532	460	92,8	
VM 85/220 G2	0822001G2	28,34	28,60	526	271	198	532	460	101,2	
VM 85/ 30	0853001DN50	3,64	3,90	149	271	198	532	460	34,1	DN 50/ PN 40
VM 85/ 40	0854001DN50	4,94	5,20	170	271	198	532	460	38,4	
VM 85/ 50	0855001DN50	6,24	6,50	192	271	198	532	460	42,7	
VM 85/ 60	0856001DN50	7,54	7,80	213	271	198	532	460	47,0	
VM 85/ 80	0858001DN50	10,14	10,40	256	271	198	532	460	55,6	
VM 85/100	0810001DN50	12,74	13,00	299	271	198	532	460	64,2	
VM 85/120	0812001DN50	15,34	15,60	342	271	198	532	460	72,8	
VM 85/150	0815001DN50	19,24	19,50	407	271	198	532	460	84,0	
VM 85/180	0818001DN50	23,14	23,40	471	271	198	532	460	97,2	
VM 85/200	0820001DN50	25,74	26,00	514	271	198	532	460	105,6	
VM 85/220	0822001DN50	28,34	28,60	616	271	198	532	460	114,0	
VM 200/ 30	2003001G	5,40	5,80	88	307	202	702	596	36,2	G 2 ½
VM 200/ 40	2004001G	7,30	7,70	110	307	202	702	596	43,6	
VM 200/ 50	2005001G	9,20	9,60	132	307	202	702	596	51,0	
VM 200/ 60	2006001G	11,10	11,50	154	307	202	702	596	58,4	
VM 200/ 70	2007001G	13,00	13,40	176	307	202	702	596	65,8	
VM 200/ 80	2008001G	15,00	15,40	198	307	202	702	596	73,2	
VM 200/ 90	2009001G	16,90	17,30	220	307	202	702	596	80,6	
VM 200/100	2010001G	18,80	19,20	242	307	202	702	596	88,0	
VM 200/110	2011001G	20,70	21,10	264	307	202	702	596	95,4	
VM 200/120	2012001G	22,60	23,00	286	307	202	702	596	102,8	
VM 200/130	2013001G	24,50	24,90	308	307	202	702	596	110,2	
VM 200/140	2014001G	26,40	26,80	330	307	202	702	596	117,6	
VM 200/150	2015001G	28,30	28,70	352	307	202	702	596	125,0	
VM 200/160	2016001G	30,20	30,60	374	307	202	702	596	132,4	
VM 200/170	2017001G	32,10	32,50	396	307	202	702	596	139,8	
VM 200/180	2018001G	34,00	34,40	418	307	202	702	596	147,2	
VM 200/190	2019001G	35,90	36,30	440	307	202	702	596	154,6	
VM 200/200	2020001G	37,80	38,20	462	307	202	702	596	162,0	
VM 200/ 30 DN65	2003001DN65	5,40	5,80	152	307	202	702	596	50,2	DN 65
VM 200/ 40 DN65	2004001DN65	7,30	7,70	174	307	202	702	596	57,6	
VM 200/ 50 DN65	2005001DN65	9,20	9,60	196	307	202	702	596	65,0	
VM 200/ 60 DN65	2006001DN65	11,10	11,50	218	307	202	702	596	72,4	
VM 200/ 70 DN65	2007001DN65	13,00	13,40	240	307	202	702	596	79,8	
VM 200/ 80 DN65	2008001DN65	15,00	15,40	262	307	202	702	596	87,2	
VM 200/ 90 DN65	2009001DN65	16,90	17,30	284	307	202	702	596	94,6	
VM 200/100 DN65	2010001DN65	18,80	19,20	306	307	202	702	596	102,0	
VM 200/110 DN65	2011001DN65	20,70	21,10	328	307	202	702	596	109,4	
VM 200/120 DN65	2012001DN65	22,60	23,00	350	307	202	702	596	116,8	
VM 200/130 DN65	2013001DN65	24,50	24,90	372	307	202	702	596	124,2	
VM 200/140 DN65	2014001DN65	26,40	26,80	394	307	202	702	596	131,6	
VM 200/150 DN65	2015001DN65	28,30	28,70	416	307	202	702	596	139,0	
VM 200/160 DN65	2016001DN65	30,20	30,60	438	307	202	702	596	146,4	
VM 200/170 DN65	2017001DN65	32,10	32,50	460	307	202	702	596	153,8	
VM 200/180 DN65	2018001DN65	34,00	34,40	482	307	202	702	596	161,2	
VM 200/190 DN65	2019001DN65	35,90	36,30	504	307	202	702	596	168,6	
VM 200/200 DN65	2020001DN65	37,80	38,20	526	307	202	702	596	176,0	

Accessories

Insulation

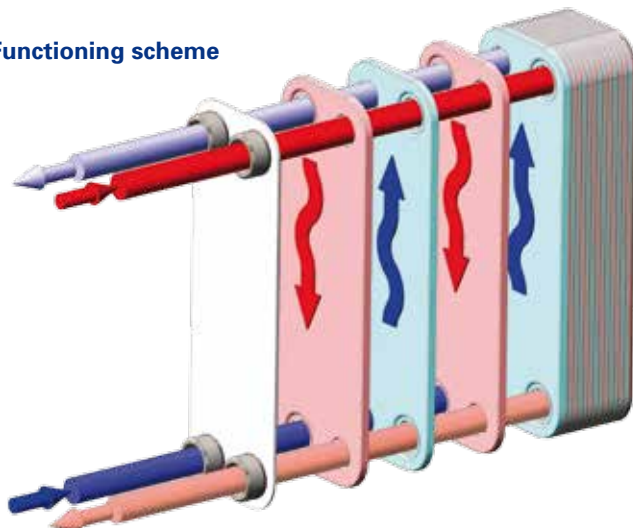
Size	Number of plates	Dimensions LxBxH (mm)	Item #
VM 12	10 - 20	90 x 140 x 260	0121002
VM 12	30 - 40	140 x 140 x 260	0123003
VM 15	10 - 20	90 x 140 x 280	0151002
VM 15	30 - 40	140 x 140 x 280	0153002
VM 25	10 - 30	150 x 170 x 380	0251002
VM 25	40 - 60	210 x 170 x 380	0254002
VM 25	80	270 x 170 x 380	0258002
VM 30	10 - 30	150 x 170 x 380	0301002
VM 30	40 - 60	210 x 170 x 380	0304002
VM 30	80 - 100	270 x 170 x 380	0308002
VM 55	10 - 30	140 x 190 x 600	0550602
VM 55	40 - 60	220 x 190 x 600	0554002
VM 55	80 - 100	310 x 190 x 600	0558002
VM 60	10 - 30	140 x 190 x 600	0600602
VM 60	40 - 60	220 x 190 x 600	0604002
VM 60	80 - 100	310 x 190 x 600	0608002
VM 85	30 - 50	210 x 330 x 590	08530021
VM 85	60 - 70	240 x 330 x 590	08530022
VM 85	80 - 100	320 x 340 x 615	0858002
VM 85	120 - 150	405 x 340 x 615	0812002
VM 85	180 - 220	615 x 340 x 615	0818002
VM 200	30 - 70	245 x 390 x 890	2003002
VM 200	80 - 130	385 x 390 x 890	2008002
VM 200	140 - 200	640 x 410 x 905	2001402



Brackets

Size	Model		Item #
VM 30, VM 55, VM 60	universal-floor- wall-bracket	10 - 30	0356030
		40 - 60	0356060
		80 - 100	0356100
VM 85 VM 200	2 pcs. floor bracket incl. 4 pcs. threaded bolts M 8 x 20		0850008
	2 pcs. transport hooks incl. 4 pcs. threaded bolts M 8 x 20		0850009

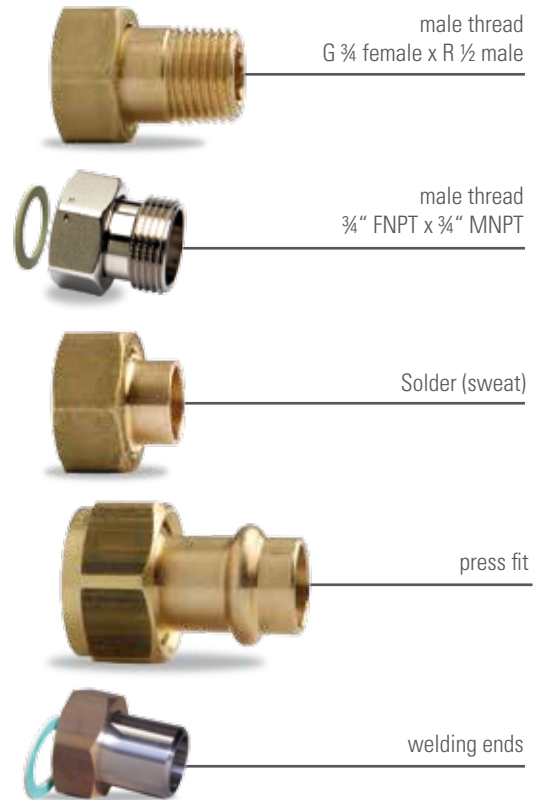
Functioning scheme



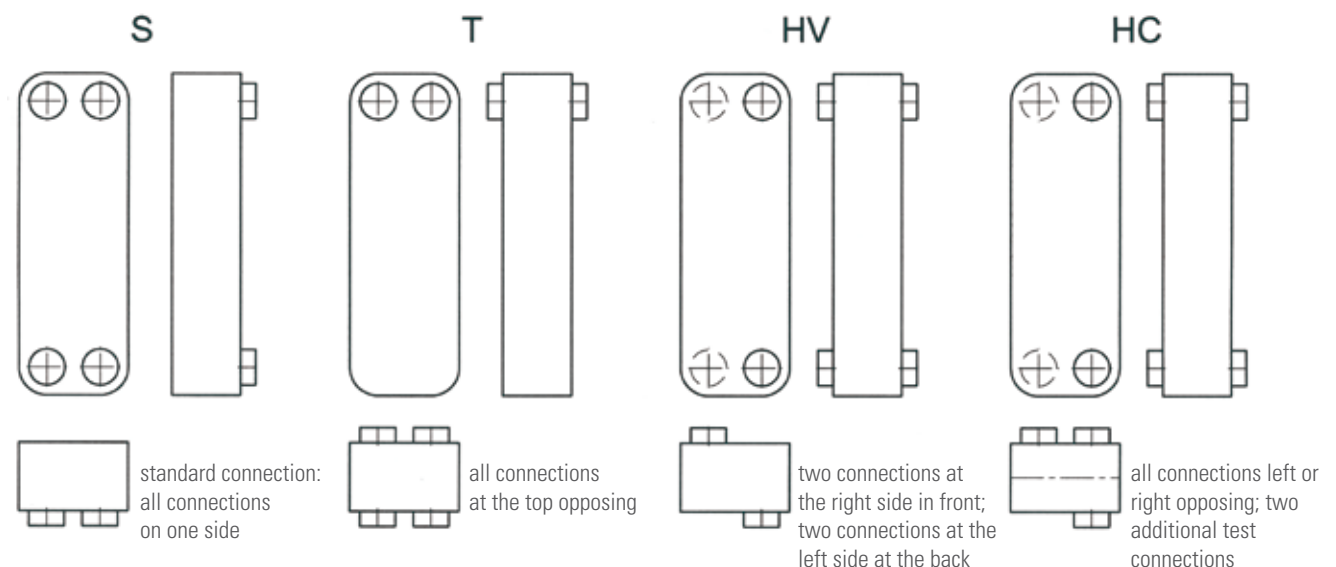
Accessories

Adapter Options

Size	Model	Connection size	Item #
VM 12	male thread	G ¾ x R ½	0151004
VM 15	male thread	G ¾ x ¾	0151014
VM 25	solder connection	G ¾ x 15	0151005
	press fit connection	G ¾ x 15	0151006
	welding ends	G ¾ x 15	0151007
	male thread	G 1 x R ¾	0301004
VM 30	male thread	G 1 x 1	0301014
VM 66	solder connection	G 1 x 22	0301005
	press fit connection	G 1 x 22	0301006
	welding ends	G 1 x 20	0301007
	male thread	G 1 ¼ x R 1	0600604
VM 60	male thread	G 1 ¼ x 1 ¼	0600614
	solder connection	G 1 ¼ x 28	0600605
	press fit connection	G 1 ¼ x 28	0600606
	welding ends	G 1 ¼ x 25	0600607
	male thread	G 2 x R 1 ½	0853004
VM 85 G2	male thread	G 2 x 2	0853014
	solder connection	G 2 x 42	0853005
	press fit connection	G 2 x 42	0853006
	welding ends	G 2 x 48	0853007
VM 200	male thread	G 2 ½ x G 2 ½	2003014
	press fit connection	G 2 ½ x 54	2003006
	welding ends	G 2 ½ x 50	2003007



Connection options



All heat exchangers of connection version „S“ are standard models which are on stock. All other versions are special models. The number of plates can be customized due to our flexible production. Special requests as the affixing of threaded bolts for assembly purposes are possible.

Operating parameters

Material

- Plates: Stainless Steel AISI 316L SS
- Connections: Stainless Steel AISI 304 SS
- Brazing material: Copper

Operating conditions

- Maximum operating pressure: 30 bar
- Maximum operating temperature: 225 °C
- PED 2014/68/EU approval

Resistance chart

The following values for water substances are to be respected and not exceeded:



Water parameters	Unit	max. allowed values
pH-value		7 - 9
Saturation Index		-0,2 < 0 < +0,2
Total hardness	°dH	6 - 15
Conductivity	µS/cm	10 - 500
Filtered Substances	mg/l	< 30
Chlorides	mg/l	< 300 (≤ 50 °C) < 100 (≤ 75 °C) < 10 (≤ 90 °C) more than 100 °C Chlorides prohibited
Free Chlorine	mg/l	< 0,6
Hydrogen sulphide	mg/l	< 0,05
Ammonia	mg/l	< 2
Sulphates	mg/l	< 100
Hydrogen Carbonate	mg/l	70 - 300
Hydrogen Carbonate / Sulphates	mg/l	> 1
Sulphates	mg/l	< 1
Nitrate	mg/l	< 100
Nitrite	mg/l	< 0,1
Iron	mg/l	< 0,2
Manganese	mg/l	< 0,1
free aggressive carbonic acid	mg/l	< 20



Quickfinder

System Isolation: boiler / underfloor heating

maximum thermal efficiency kW:				5 to 15	16 to 30	31 to 40	41 to 50	51 to 60	61 to 80	81 to 100
primary		secondary		Type of heat exchanger						
input	output	input	output							
90°C	70°C	40°C	50°C	VM 15-10	VM 15-20	VM 15-30	VM 15-40	VM 30-50	VM 30-60	VM 30-80
70°C	50°C	35°C	45°C							
70°C	50°C	40°C	50°C							
60°C	50°C	30°C	45°C							

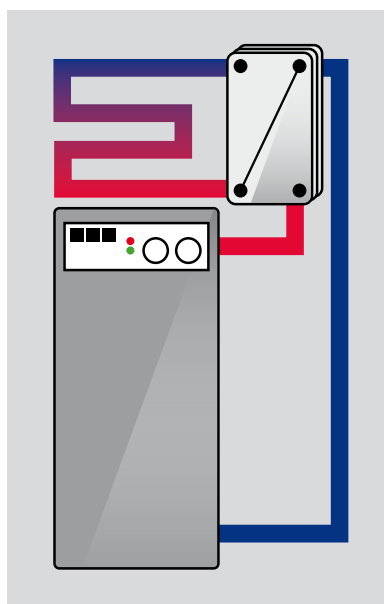
Solar Unit Glycol 35%: fresh water heating

maximum thermal efficiency kW:				5	6 to 15	16 to 25	26 to 35	36 to 50	51 to 70	71 to 90
primary		secondary		Type of heat exchanger						
input	output	input	output							
70°C	50°C	10°C	60°C	VM 25-10	VM 25-20	VM 25-30	VM 25-40	VM 30-20	VM 30-30	VM 30-40
70°C	25°C	10°C	60°C	VM 30-20	VM 60-14	VM 60-20	VM 60-30	VM 60-40	VM 60-50	VM 60-60
65°C	40°C	10°C	60°C	VM 30-10	VM 30-20	VM 30-30	VM 30-40	VM 30-50	VM 30-60	VM 30-80

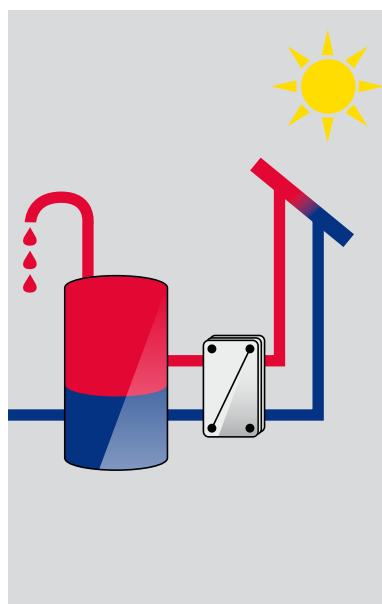
Solar Unit Glycol 35%: Swimming Pool

maximum thermal efficiency kW:				5 to 8	9 to 20	21 to 30	31 to 40	41 to 60	61 to 80	81 to 100
primary		secondary		Type of heat exchanger						
input	output	input	output							
70°C	50°C	20°C	30°C	VM 25-10	VM 25-20	VM 25-30	VM 25-40	VM 30-50	VM 30-60	VM 30-80
70°C	25°C	15°C	25°C							
65°C	40°C	10°C	20°C							

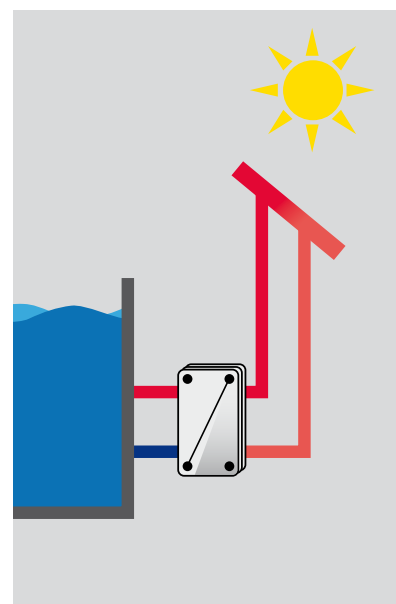
*) all calculations at max. 20 kPa pressure loss



System Isolation:
boiler / underfloor heating



Solar Unit Glycol 35%:
fresh water heating



Solar Unit Glycol 35%:
Swimming Pool

Quickfinder

Pass-through fresh water heating

maximum thermal efficiency kW:				5 to 15	16 to 30	31 to 50	51 to 70	71 to 90	91 to 120	121 to 150
primary		secondary		Type of heat exchanger						
input	output	input	output							
70°C	55°C	10°C	60°C	VM 25-10	VM 25-20	VM 25-30	VM 25-40	VM 30-50	VM 30-60	VM 30-80
90°C	70°C	10°C	60°C	VM 25-10	VM 25-10	VM 25-20	VM 25-20	VM 25-30	VM 30-50	VM 30-60
60°C	50°C	10°C	50°C	VM 25-10	VM 25-20	VM 25-30	VM 30-50	VM 30-80	VM 85-30	VM 85-40

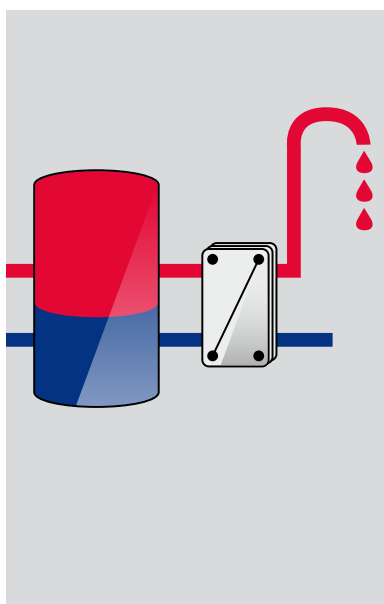
Heating buffer

maximum thermal efficiency kW:				5 to 15	16 to 30	31 to 50	51 to 70	71 to 90	91 to 120	121 to 150
primary		secondary		Type of heat exchanger						
input	output	input	output							
70°C	55°C	50°C	65°C	VM 30-30	VM 30-50	VM 60-30	VM 60-40	VM 60-50	VM 60-80	VM 85-30
90°C	70°C	50°C	70°C	VM 25-10	VM 25-20	VM 25-30	VM 25-40	VM 30-40	VM 30-50	VM 30-60
90°C	55°C	50°C	70°C	VM 30-10	VM 30-20	VM 30-30	VM 30-40	VM 30-50	VM 30-60	VM 30-80

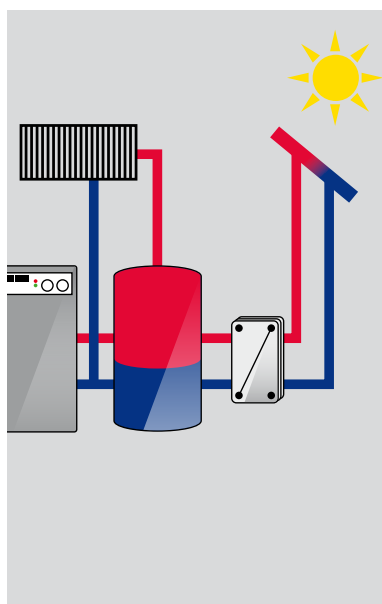
District Heating

maximum thermal efficiency kW:				5 to 15	16 to 30	31 to 50	51 to 70	71 to 90	91 to 120	121 to 150
primary		secondary		Type of heat exchanger						
input	output	input	output							
130°C	55°C	50°C	90°C	VM 30-10	VM 30-20	VM 30-30	VM 30-40	VM 30-50	VM 30-60	VM 30-80
130°C	55°C	50°C	70°C	VM 25-20	VM 25-30	VM 25-40	VM 30-30	VM 30-40	VM 30-50	VM 30-60
110°C	55°C	50°C	90°C	VM 30-20	VM 30-40	VM 60-20	VM 60-24	VM 60-30	VM 60-40	VM 60-50
110°C	60°C	55°C	80°C	VM 25-30	VM 30-20	VM 30-30	VM 30-40	VM 30-50	VM 30-60	VM 30-80

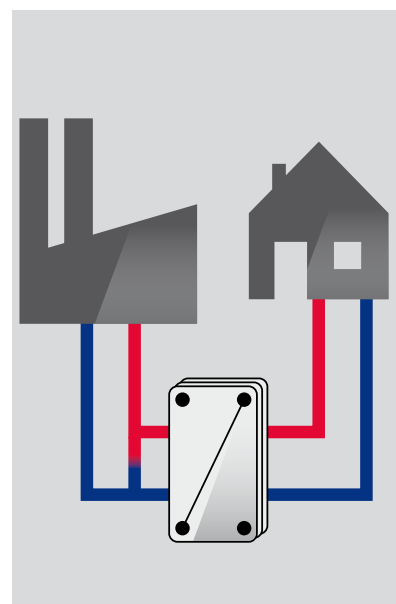
*) all calculations at max. 20kPa pressure loss



Pass-through fresh water heating



Heating buffer



District Heating

We proudly present our Brazed Plate Heat Exchanger for refrigeration technology

- cost effective
- compact and easy weight
- completely brazed
- The design ensures high mechanical capability and
- complete helium tightness



Applications

EXEL heat exchangers are tried-and-tested product for refrigeration in various systems, in particular as a refrigerant evaporator and condenser for heat pumps. EXEL ensures the following functions in the cooling circuit:

- evaporation (liquid cooling)
- liquefaction (water cooled)
- decompression (heat recovery)
- overheating / subcooling (economizer)
- oil cooling (water or refrigerant cooled)

Models

EXEL is available in five different sizes (EXL 2, EXL 4, EXL 7, EXL 14 and EXL 21). The maximum number of plates varies between 40 and 200 plates dependent on the size.

Description

EXEL is constructed of several layers of baffled stainless steel plates. The plates made of AISI 316 L (1.4404) are pressed and jointed to a plate pack and brazed with 99.99% pure copper brazing agent using a vacuum oven process.

Operation conditions

- permissible operating temperature:
 - max. = 225° C (depending on medium and pressure)
 - min. = -40° C
- permissible operating pressure:
 - max. (acc. to DGL 2014/68/EU): PS=42 bar (depending on model and temperature)
 - min. = vacuum

Additional equipment

Different connection versions, brackets and insulations are available at request.

**More information about our products:
www.vau-thermotech.de**

Our complete product range



Brazed Plate Heat Exchangers for heating and refrigeration

- District heating
- Heat pumps
- HVAC
- solar energy stations
- fresh water stations
- refrigeration



Gasketed Plate Heat Exchangers

- Food industry
- Chemical industry
- Petrochemical industry
- Processing industry



Fully welded Hybrid-Plate Heat Exchanger

- Power stations
- Refrigeration
- Sugar evaporators
- Natural gas production
- Petrochemical industry
- Chemical industry
- Pharmaceutical industry
- Beverage and food industry

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