

Brazed Plate and Gasketed Plate Heat Exchangers

LOWARA
a xylem brand

Brazed Plate Heat Exchangers

Smaller, lighter, stronger and more efficient.

Lowara Brazed Plate Heat Exchangers are ideal for residential and light commercial hydronic systems because they provide maximum heat dissipation from a compact, lightweight heat exchanger. Unlike conventional shell and tube heat exchangers, our units can be used even in applications where space is at a premium. Their efficient design allows them to provide more heat transfer using less space, making them well suited to a variety of installations, including:

- Radiant Floors.
- Domestic Hot Water.
- Pool Heating.
- HVAC.
- Solar Heating.
- District Heating.
- Domestic/Commercial Boilers.

Superior heat transfer.

Our Brazed Plate Heat Exchangers offer the highest level of thermal efficiency and durability in a compact, low cost unit. The corrugated plate design provides very high heat transfer coefficients, resulting in a more compact design. The unit's stainless steel plates are vacuum brazed together to form a durable, integral piece that can with stand high pressure and temperature.

Designed for dependability.

By using a brazing process we eliminated the need for gasketed or rolled joints commonly found in traditional exchangers. This allows for higher operating pressures and temperatures with no maintenance and no leaks. The corrugated plates easily handle highly viscous fluids, turbulating them for maximum efficiency. Corrosion resistant materials ensure a long operating life.

Small size...Big impact.

Mechanical Design:
Design pressures up to 30 Bar.
Maximum design temperature up to 232°C.
Minimum design temperature to -190°C.

Construction:
Our Brazed Plate Heat Exchangers are approved according to pressure equipment PED 97-23-EC

Materials:
Stainless Steel 316L plates. Copper brazed material.

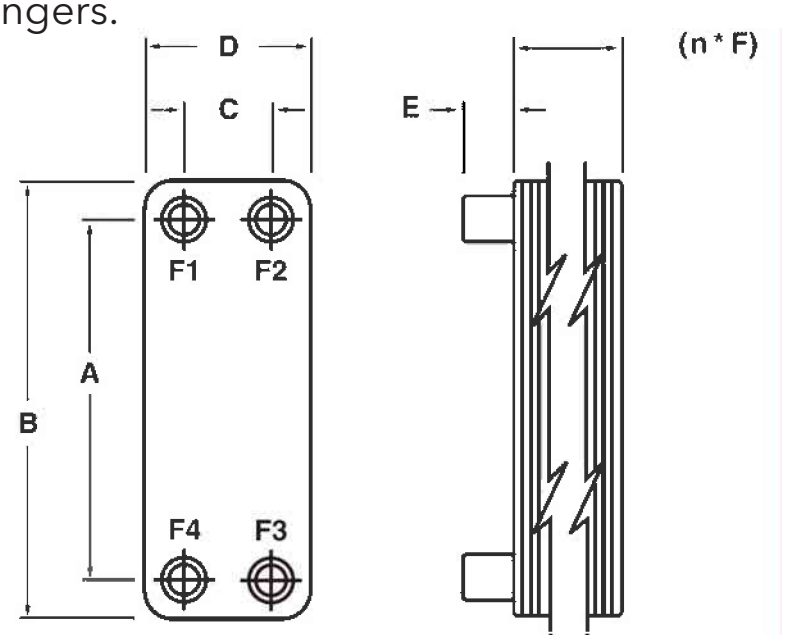
Capacity:
Up to 50.40 l/sec and 32.52 m². of surface area.



Mounting:
Reduce mounting costs with optional threaded studs or integral mounting bracket.

Connections:
From 1/2 inch to 4 inch. Standard connection options include NPT, SAE Flanged and Sweat. Custom connections available.

Copper Heat Exchangers.



Model Type	a	b	c	d	e	f	g	Connection	Volume Liter/channel	Weight (kgs.)	Max. # of plates
BP400	171.8	214.5	41.9	80.7	24.1	1.98	10.2	G3/4"	0.029	.06 x n + 1.18	50
BP405	354.8	397.5	41.9	80.7	24.1	1.98	10.2	G3/4"	0.059	0.11 x n + 1.60	75
BP410	249.7	309.6	50	112	24.1	2.462	10.2	G1"	0.060	0.13 x n + 1.60	150
BP411	249.7	309.6	50	112	24.1	2.462	10.2	G1"	0.060	0.13 x n + 1.60	150
BP412	249.7	309.6	50	112	24.1	2.462	10.2	G1"	0.060	0.13 x n + 1.60	150
BP415	465.7	525.4	50	112	24.1	2.462	10.2	G1"	0.103	0.23 x n + 2.04	150
BP422	518.5	616.8	91.9	190	48.2	2.921	10.2	G2"	0.266	0.44 x n + 7.00	200
BP423	518.5	616.8	91.9	190	48.2	2.921	10.2	G2"	0.266	0.44 x n + 7.00	200
BP424	518.5	616.8	91.9	190	48.2	2.921	10.2	G2"	0.266	0.44 x n + 7.00	200
BP432	622.3	892.1	211	430	88.8	2.898	31.02	DN 80 PN 25	0.815	0.95 x n + 71.70	250
BP433	863.5	1194	256	515	88.8	2.898	31.02	DN 100 PN 25	1.220	1.47 x n + 111.60	250
BP434	863.5	1194	256	515	88.8	2.898	31.02	DN 100 PN 25	1.220	1.47 x n + 111.60	250
BP435	863.5	1194	256	515	88.8	3.909	31.02	DN 100 PN 25	1.220	1.47 x n + 111.60	180

Dimensions in mm

n = number of plates

Typical Connection Locations **(Side-1: F1 & F4, Side-2: F2 & F3)**

Sensible Application (liquids or gases - no phase change)

1) For all models the F2 - F3 side has one extra channel, ie. BP 410-10 has 4 channels on the F1 - F4 side and 5 on the F2 - F3 side.
2) Liquid applications should be plumbed in a counter-current, parallel, flow arrangement, (for example: Hot in at F1/Hot out at F4; Cold in at F3/Cold out at F2). Hot and cold side and in and out locations aren't critical as long as the piping is in a counter-current, parallel, flow arrangement. Unit may be mounted in any orientation.
3) Connections may be on the front (ie. F1, F2, F3, F4) or back (ie. B1, B2, B3, B4) of the unit.

Phase Change Applications

1) Units should be mounted in the vertical direction, similar to the figure above and plumbed with the vapor connection up and the liquid connection down on the phase change side see below.

Phase Change

Condensers	
Vapor In:	F1/B1
Condensate Out:	F4/B4
Liquid In:	F3/B3
Liquid Out:	F2/B2

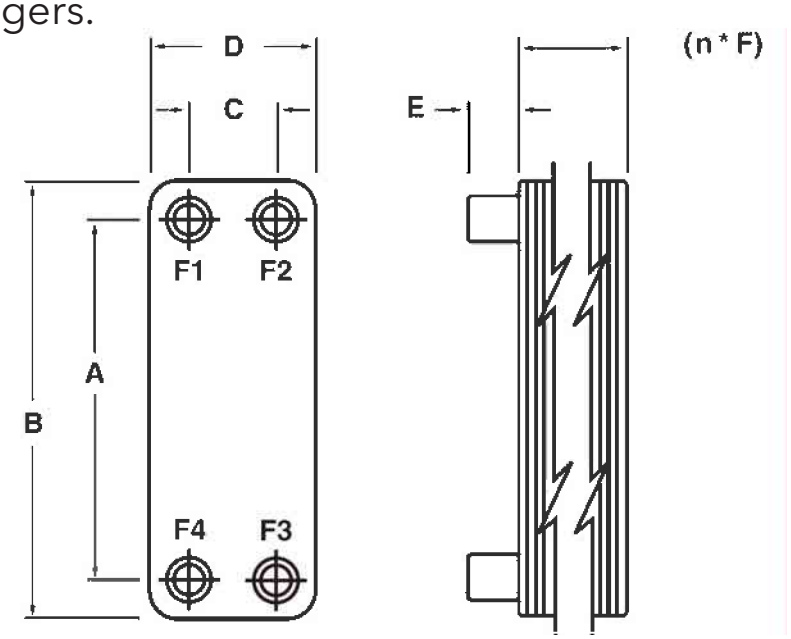
Standard Materials

Cover Plate:	ASTM 316L stainless steel
Channel Plates:	ASTM 316L stainless steel
Connections:	ASTM 316L stainless steel
Brazing Material:	Copper

Design Specifications Copper Brazed

Design Pressure:	30 Bar.
Design Temperature:	232°C.
	-190°C.

Nickel Heat Exchangers.



Model Type	a	b	c	d	e	f	g	Connection	Volume Liter/channel	Weight (kgs.)	Max. # of plates
BPN400	171.8	214.5	41.9	80.7	24.1	1.98	17	G3/4"	0.029	0.06 x n + 1.91	50
BPN410	249.7	309.6	50	112	24.1	2.462	17	G1"	0.060	0.13 x n + 3.08	150
BPN411	249.7	309.6	50	112	24.1	2.462	17	G1"	0.060	0.13 x n + 3.08	150
BPN412	249.7	309.6	50	112	24.1	2.462	17	G1"	0.060	0.13 x n + 3.08	150
BPN415	465.7	525.4	50	112	24.1	2.462	17	G1"	0.103	0.23 x n + 4.58	150
BPN422	518.5	616.8	91.9	190	48.2	2.921	17	G2"	0.266	0.44 x n + 9.62	200
BPN423	518.5	616.8	91.9	190	48.2	2.921	17	G2"	0.266	0.44 x n + 9.62	200
BPN424	518.5	616.8	91.9	190	48.2	2.921	17	G2"	0.266	0.44 x n + 9.62	200

Dimensions in mm

n = number of plates

Typical Connection Locations **(Side-1: F1 & F4, Side-2: F2 & F3)**

Sensible Application (liquids or gases - no phase change)

1) For all models the F2 - F3 side has one extra channel, ie. BP 410-10 has 4 channels on the F1 - F4 side and 5 on the F2 - F3 side.
2) Liquid applications should be plumbed in a counter-current, parallel, flow arrangement, (for example: Hot in at F1/Hot out at F4; Cold in at F3/Cold out at F2). Hot and cold side and in and out locations aren't critical as long as the piping is in a counter-current, parallel, flow arrangement. Unit may be mounted in any orientation.
3) Connections may be on the front (ie. F1, F2, F3, F4) or back (ie. B1, B2, B3, B4) of the unit.

Phase Change Applications

1) Units should be mounted in the vertical direction, similar to the figure above and plumbed with the vapor connection up and the liquid connection down on the phase change side see below.

Single Phase

Liquid to Liquid	
Hot In:	F1
Hot Out:	F4
Cold In:	F3
Cold Out:	F2

Standard Materials

Cover Plate:	ASTM 316L stainless steel
Channel Plates:	ASTM 316L stainless steel
Connections:	ASTM 316L stainless steel
Brazing Material:	Nickel

Design Specifications Copper Brazed

Design Pressure:	Model (400/41X) 30 Bar.
	Model (42X) 26.7 Bar.
Design Temperature:	232°C.
	-190°C.

Brazed Plate Quick Selection Table.

Floor Heating* System Separation**

Model	primary	70/50 C*	70/50 C*	55/49 C*	55/40 C*	80/60 C**	80/60 C**
	secondary	40/50 C	35/45 C	40/45 C	30/40 C	50/70 C	55/75 C
	Part #	Heating Capacity (kW)					
BP400-10		10	11	5	6	-	-
BP400-20		22	21	11	16	7	-
BP400-30		30	30	15	26	11	-
BP400-40		36	36	18	35	15	-
BP410-10		14	14	7	14	8	-
BP410-20		28	28	14	28	20	4
BP410-30		40	40	20	40	33	6
BP410-40		52	52	26	52	45	8
BP410-50		62	62	31	62	57	10
BP410-60		72	72	36	72	69	13
BP405-10		-	-	-	-	14	4
BP405-20		-	-	-	-	30	10
BP405-30		-	-	-	-	44	15
BP405-40		-	-	-	-	56	21
BP405-50		-	-	-	-	66	26
BP415-10		-	-	-	-	16	8
BP415-14		-	-	-	-	24	14
BP415-20		-	-	-	-	36	20
BP415-24		-	-	-	-	44	26
BP415-30		-	-	-	-	55	33

All tables based on maximum pressure drop of 20 kpa

Potable Water Heating* Solar/Potable Water Heating** Solar/Swimming Pool***

Model						38% PG	38% PG
	primary	70/50 C*	70/25 C*	65/40 C*	55/30 C*	65/40 C**	40/25 C***
	secondary	10/60 C	10/60 C	10/60 C	10/50 C	10/60 C	15/25 C
	Part #	Heating Capacity (kW)					
BP400-10		6	-	-	-	-	-
BP400-20		14	-	-	-	-	-
BP400-30		24	-	6	-	-	8
BP400-40		33	-	8	-	-	11
BP410-10		18	-	5	-	-	7
BP410-20		45	6	13	8	7	16
BP410-30		73	10	21	12	12	25
BP410-40		96	14	28	16	16	34
BP410-50		116	18	36	21	20	43
BP410-60		135	21	37	25	24	52
BP405-10		-	6	13	7	7	-
BP405-20		-	14	32	18	18	-
BP405-30		-	24	51	29	29	-
BP405-40		-	33	68	40	40	-
BP405-50		-	43	80	51	51	-
BP415-10		-	13	20	16	16	-
BP415-14		-	20	30	26	26	-
BP415-20		-	32	44	40	40	-
BP415-24		-	40	54	51	51	-
BP415-30		-	50	68	65	65	-

All tables based on maximum pressure drop of 20 kpa

Brazed Plate Quick Selection Table...continued

District Heating

Model	primary	130/55 C	130/55 C	130/60 C	110/55 C	110/55 C	110/60 C
	secondary	50/90 C	50/70 C	55/80 C	50/90 C	50/70 C	55/80 C
	Part #	Heating Capacity (kW)					
BP400-10		-	7	5	-	-	-
BP400-20		6	17	13	-	11	7
BP400-30		9	27	20	-	18	11
BP400-40		12	37	28	-	25	15
BP410-10		8	22	17	-	15	9
BP410-20		19	52	40	8	35	22
BP410-30		30	80	62	13	57	35
BP410-40		41	103	87	18	76	48
BP410-50		53	123	110	23	95	61
BP410-60		65	140	135	28	115	74
BP405-10		20	-	21	8	17	21
BP405-20		48	-	41	20	32	41
BP405-30		75	-	60	31	46	58
BP405-40		105	-	75	43	58	73
BP405-50		135	-	87	55	67	85
BP415-10		40	-	26	18	20	25
BP415-14		57	-	35	29	28	35
BP415-20		82	-	50	45	40	51
BP415-24		95	-	60	55	48	60
BP415-30		120	-	75	71	59	74

All tables based on maximum pressure drop of 20 kpa

Gasketed Plate Heat Exchangers

Lowara technology offers maximum efficiency in less space, with outstanding application flexibility.

Innovative plate design allows heat exchangers to provide more heat transfer using less space.

- Models have higher surface area to volume ratios.
- Offers superior heat transfer coefficients.
- Offers "true" countercurrent flow, which maximizes the mean temperature difference between the fluids.

Expansive product line meets a variety of needs. The range has the capability to meet any size application, and it offers a wide variety of plate construction materials and connection types. You can choose products constructed from 304 or 316 stainless steel, titanium, Hastelloy,® Incolloy® or other metals. Plates can be gasketed, semi-welded, double wall, or free flow, depending on your particular application.



Typical applications.

Their efficient design allows the heat exchanger to be used in a variety of applications and installations, including the following:

- HVAC.
- District Heating and Cooling.
- Heat Pumps.
- Thermal Storage.
- Food and Drink Industry.

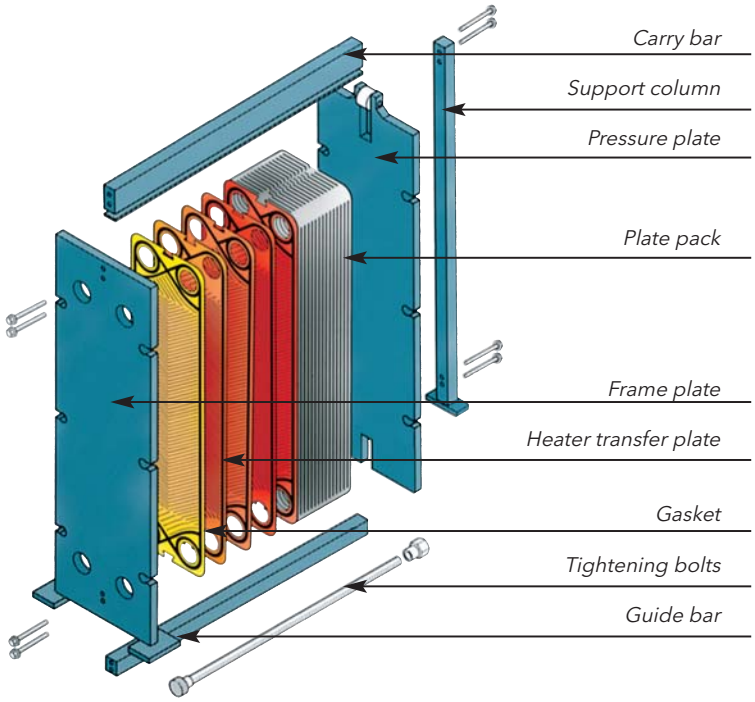
Advanced system offers superior efficiency.

A combination of chevron-style heat transfer plates sequenced between a frame plate and pressure plate. The heat transfer plates have holes at the four corners that form a header, which distributes the respective fluids to the opposite sides of each plate when the plates align. The fluids are confined to the heat transfer surface of the plate or the port, as appropriate, with elastomer gaskets. Countercurrent flow is obtained with a given fluid traveling up one side of a plate and the other fluid down the opposite side of the plate.

The plate's chevron patterns create metal-to-metal contact points between adjacent plates for added strength. This allows differential pressures equal to the design pressure. The entire assembly is held together with tightening bolts. Carry/guide bars are used to obtain the correct alignment.

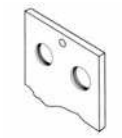
Modular design allows for easy installation and maintenance.

Our design makes assembly, inspection and cleaning easy.

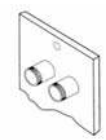


- Easy to install and move.
- Readily expandable and easy to inspect or clean.
- With studded connection, no welding is required.
- Opening or closing the unit does not require disconnecting the piping.
- No special tools needed to tighten plate pack.
- Tightening bolt design allows opening and closing the unit from frame plate.
- Has vertical flow, so inlet and outlet connections are above and below each other and on the same plane for easy installation.
- Studded connections withstand higher piping loads than nozzles.

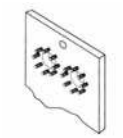
Connection Options.



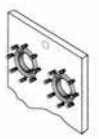
Standard threaded connection



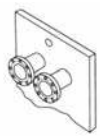
Threaded connection with alloy nozzle



Standard studded connection



Studded connection with alloy lining



Flanged connection

Technical Data	
Performance: Maximum Flowrate (l/sec)	1365 l/sec
Max. Heat Transfer Area (m^2)	Up to 1858 m^2
Connections: BSP Nozzles - Size (Inches)	1 Inch to 2 Inch
Connections: ADN Studded Size (mm)	65mm up to 450mm
Frame Materials	Primed and Epoxy Coated Carbon Steel
Plate Material	Stainless Steel, Titanium, Hastelloy™, Other Higher Alloys
Gasket Materials	Nitrile, EPDM, ViTonTM
Frame Design Pressure	10 Bar and 20 Bar Standard. Up to 30 Bar by request
Design Temperatures	-35°C to 170°C
Bolting Materials	Zinc Plated Carbon Steel
Plate Pack Shroud	Aluminum with option for Stainless Steel

About Xylem Applied Water Systems

Xylem's Applied Water Systems is known for its systems and applications expertise across the building services, general industrial, food and beverage, marine and agricultural markets. Serving the global marketplace with its leading portfolio of innovative and energy- efficient products and brands, AWS delivers on the challenge to solve the world's most critical water issues. For more information on AWS, please visit http://**www.xylemappliedwater.com**

Xylem

Xylem /'zīləm/
1) The tissue in plants that brings water upward from the roots.
2) A leading global water technology company.

We're 12,000 people unified in a common purpose: creating innovative solutions to meet our world's water needs. Developing new technologies that will improve the way water is used, conserved, and re-used in the future is central to our work. We move, treat, analyze, and return water to the environment, and we help people use water efficiently, in their homes, buildings, factories and farms.
In more than 150 countries, we have strong, long-standing relationships with customers who know us for our powerful combination of leading product brands and applications expertise, backed by a legacy of innovation. For more information on how Xylem can help you, go to xyleminc.com.
www.xyleminc.com

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VOGEL PUMPEN · WEDECO · REDJACKET® Water Products

xylem
Let's Solve Water

Lowara UK Limited
Millwey Rise Industrial Estate
Axminster, Devon EX13 5HU - UK
Tel: 01297 630230
Fax: 01297 630270
e-mail: lowaraukcbs@xyleminc.com
e-mail: lowaraukenquiries@xyleminc.com
http://www.lowara.co.uk
http://www.xyleminc.com

Xylem Water Solutions Ireland Limited
50 Broomhill Close
Airton Road
Tallaght - Dublin 24
Tel. (+353) 01 4524444
Fax (+353) 01 4524795
e-mail: lowara.ireland@xyleminc.com
http://www.lowara.ie

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