

# BRAZED PLATE HEAT EXCHANGER

## Technical Data Sheet

A Brazed Plate Heat Exchanger (BPHE) offers the highest level of thermal efficiency and durability in a compact, low-cost unit. The compact BPHE is constructed as a plate package of corrugated channel plates with a filler material between each plate. During the vacuum brazing process, the filler material forms a brazed joint at every contact point between the plates, creating complex channels. The BPHE allows media at different temperatures to come into close proximity, separated only by channel plates that enable heat from one media to be transferred to the other with very high efficiency.

The flexibility of our BPHEs makes them an excellent choice for many applications. The wide range of plate sizes, plate pattern combinations and connections enables a virtually unlimited number of combinations.

### FEATURES:

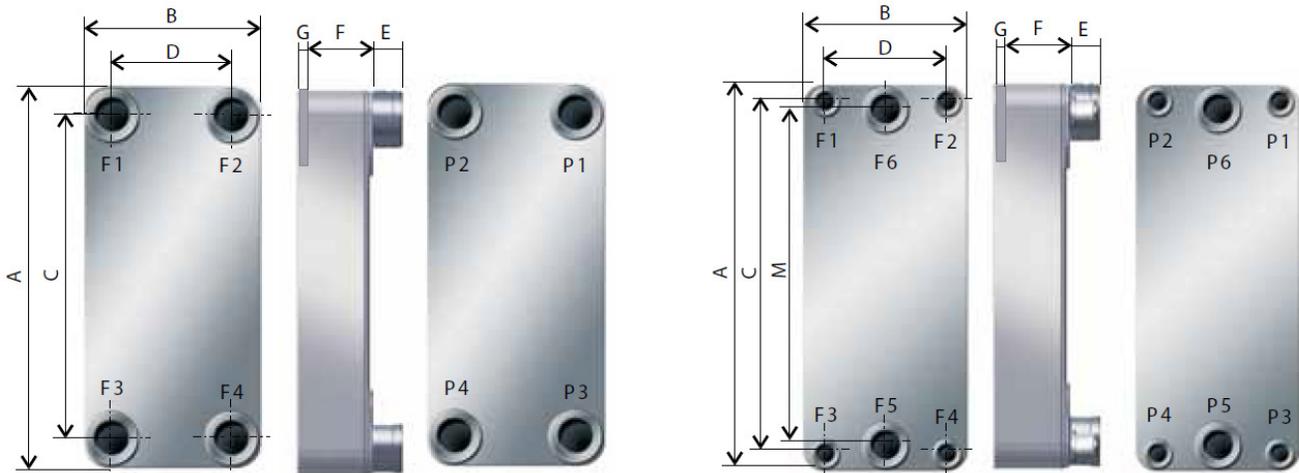
- **Tailored:** Optimized and customized
- **Performance:** Reliable, energy-efficient and cost-effective
- **Economical:** Optimal material usage
- **Versatile:** Cover a wide range of cooling and heating capacities
- **Competitive:** Save space compared with S&T heat exchangers; withstand high temperature and pressure (no gaskets)
- **Turbulent:** Resist scaling and fouling; effective self-cleaning
- **Innovative:** Patented solutions, e.g. true dual, double-wall and asymmetric BPHEs
- **Tested:** Pressure- and leak-tested. All widely recognized pressure vessel codes available, e.g. PED, KHK and UL.
- **Responsive:** Small holdup volume and lower refrigerant charge
- **Standards:** Comply with standards such as ISO 9001 (quality) and ISO 14001 (environmental)
- **Pressure Rating:** Max working pressure- 650 psi

### TYPICAL APPLICATIONS:

- **Heating:** Boilers, Heat Pumps, District Heating, Domestic Water, Radiant, Solar
- **Air Conditioning:** Chillers, Absorption Chillers, Condensers
- **Refrigeration:** Transport, Supermarkets
- **Industrial**
- **Manufacturing**
- **Process**



## DIMENSIONAL DATA:



BPHE Model	B5	BX8T	B8T	B10T	B12	B16	B16DW	B35	B35TDW
A (inch)	7.36	12.4	12.48	11.38	11.2	14.8	14.84	15.47	15.47
B (inch)	2.83	2.87	2.99	4.69	4.60	4.69	4.70	9.57	9.57
C (inch)	6.06	10.94	10.94	9.57	9.33	12.6	12.95	12.76	12.17
D (inch)	1.57	1.57	1.57	2.83	2.48	2.48	2.83	6.75	6.26
E (inch)	0.79	0.79	0.79	0.79	1.06	1.07	0.79	1.07	1
F (inch)	0.17+0.09×NoP	0.08+0.09×NoP	0.16+0.09×NoP	0.16+0.09×NoP	0.17+0.08×NoP	0.16+0.09×NoP	0.16+0.08×NoP	0.31+0.09×NoP	0.709+0.1×NoP
G (inch)	0.28	0.28	0.28	0.24	0.23	0.24	0.24	0.12	.24
Evaporator distributor types	-	-	-	V	-	-	-	V	-
Max number of plates	60	60	60	140	140	140	140	250	260
Max flow capacity water (gal/hr)	1056	1056	1056	3170	5811	5811	3962	9246	15312
Min standard connection size (inch)	1/4"	1/4"	1/4"	1/2"	1/2"	1/2"	1/4"	1"	2"
Max standard connection size (inch)	3/4"	3/4"	3/4"	1"	1¼"	1¼"	3/4"	1½"	2½"

\* Specially developed for NHP Nordic Heat Pump

### Material Available:

- Braze: Copper, Nickel, 316 SS
- Plate: 316 SS, SM0254

BPHE Model	B65	B400T	B427	B439	B500T	DB200	D300	DB400	DB500
A (inch)	34.02	27.32	27.32	38.54	35.84	20.67	20.47	27.32	38.58
B (inch)	14.29	11.97	11.97	11.97	11.97	9.57	9.37	11.97	11.97
C (inch)	28.78	23.66	22.32	33.62	33.62	17.95	17.68	23.78	34.09
D (inch)	9.04	8.09	7.05	7.05	7.05	6.85	6.3	8.50	7.52
E (inch)	2.13	2.13	2.13	1.07	1.07	1.07	1.07	2.13	1.07
F (inch)	0.67+0.09×NoP	0.71+0.09×NoP	0.87+0.09×NoP	0.47+0.09×NoP	0.47+0.09×NoP	0.39+0.08×NoP	0.39+0.09×NoP	0.47+0.08×NoP	0.47+0.09×NoP
G (inch)	0.02	0	0	0.24	0.24	0.12	0.16	0	0
M (inch)	-	-	-	-	-	17.95	15.35	23.23	32.91
Evaporator distributor types	V	V, P, S, VH	V	-	S, V	V, P	P	V, P, S	S
Max number of plates	360	280	280	360	360	202	250	282	294
Max flow capacity water (gal/hr)	52834	26417	42267	42267	42267	9246	21133	20605	28000
Min standard connection size (inch)	2½"	1⅛"	1⅝"	1⅝"	1⅜"	7/8"	1¼"	1⅛"	1⅝"
Max standard connection size (inch)	4"	3"	4"	4"	4"	2"	3"	3"	3"

BPHE Model	B28	B80	B120T	B200T	B50	B56	B57	B60
A (inch)	20.71	20.71	20.67	20.67	20.67	20.67	27.28	14.72
B (inch)	4.69	4.69	9.57	9.57	9.57	9.57	9.57	14.33
C (inch)	18.5	18.5	17.95	17.66	17.36	16.93	23.62	19.81
D (inch)	2.48	2.48	6.75	6.44	6.26	5.82	5.83	10.5
E (inch)	1.07	1.07	1.07	2.13	2.13	2.13	2.13	2.13
F (inch)	0.16+0.09×NoP	0.16+0.09×NoP	0.39+0.09×NoP	0.39+0.09×NoP	0.47+0.08×NoP	0.55+0.09×NoP	0.63+0.08×NoP	0.63+0.09×NoP
G (inch)	0.24	0.24	0.16	0.16	0.04	0.12	0.04	0.06
Evaporator distributor types	-	V, P, Q*	V, P	V, P	-	-	-	-
Max number of plates	140	140	250	250	280	250	280	300
Max flow capacity water (gal/hr)	5811	5811	9246	14529	18492	20605	20605	20605
Min standard connection size (inch)	1/2"	1/2"	7/8"	7/8"	2"	2"	1½"	2"
Max standard connection size (inch)	1¼"	1¼"	2"	2"	2½"	2½"	2½"	2½"

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## BPHE TYPES:

B-type:	The B-type is our original BPHE. Its unique plate geometry, modular design, and economical long manufacturing runs mean the product is easy to customize for many different applications.
V-type:	The V-type has been developed from the original B-type to achieve optimized performance as evaporators over a very wide capacity range. The refrigerant inlet has special technology to distribute the refrigerant evenly in each channel.
P-type:	The P-type evaporator has been developed from the V-type to optimize performance with the refrigerant R410A. The P-type is used as an evaporator in heat pump and chiller applications over a wide range of capacities.
S-type:	The S-type evaporator has been developed from the V-type to optimize performance with the refrigerant R134a. The S-type is used as an evaporator in heat pump and chiller applications.
VH-type: High Performance Evaporator:	The VH-type has been developed from the V-type for improved performance with the refrigerant R407C in a high-efficiency range. The VH-type can be used as an evaporator in chiller and heat pump applications.
DB-type:	Our patented true dual-circuit product puts the secondary circuit in contact with two primary circuits. Even if one primary circuit is shut off, the secondary circuit remains in contact with a primary circuit. These advantages make the DB-type the natural choice for flexible chillers, climate control and high-precision systems for food cooling cabinets in supermarkets.
DV-type:	Our patented true dual-circuit product puts the secondary circuit in contact with two primary circuits. Even if one primary circuit is shut off, the secondary circuit remains in contact with a primary circuit. The DV-type is optimized for evaporation, with innovative technology to distribute the refrigerant evenly in the heat exchanger.
DP-type:	The DP-type evaporator is also based on our true dual-circuit concept, and is optimized for the refrigerant R410A. Applications include flexible chillers, climate control, and high precision food cooling cabinets in supermarkets.
DS-type:	The DS-type evaporator is also based on our true dual-circuit concept, and is optimized for the refrigerant R134a. Applications include flexible chillers, climate control, and high precision food cooling cabinets in supermarkets.
BDW-type:	The Double Wall concept is designed for applications requiring high thermal efficiency and no risk of internal leakage between the two fluids, such as in the food and pharmaceutical industries. In the unlikely event of a leak, water seeps out between the vented double walls to the atmosphere, giving a visual indication of a fault.
ADWIS – Air Dryer with Integrated Separator:	We have achieved breakthrough compactness with the ADWIS, which is one of the smallest air dryers on the market. The ADWIS combines two BPHEs (a refrigerated heat exchanger and a recovery unit) sandwiching an integrated separator in a modular design. This highly cost-effective solution offers stable high performance, convenient drainage and simple insulation.
M-type (Minex):	The M-type is a hybrid PHE (plate and frame heat exchanger) sealed by gaskets instead of brazing material. It is a small unit, so it does not need the typical support frame used for traditional PHEs. Like our BPHEs, the Minex is available in various combinations of materials.

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