

Data Sheet

Brazed plate heat exchanger Type **B3 range**

For more efficient Chillers



Danfoss offers a wide range of heat exchangers in a modular system based on a platform of high quality components. You can define both the capacity and the connections you need for your specific application. The heat exchangers are compact and space saving.

Danfoss is a worldwide leading manufacturer of refrigeration & air conditioning controls and compressors. We have extended our product portfolio to include brazed plate heat exchangers BPHE, designed for a wide range of applications.

B3 brazed plate heat exchangers BPHE can be customized to your specific application requirements. These reliable products offer the same high quality you have come to expect from Danfoss, and they are backed by our industry leading sales and support organization.

Features:

- Compact size
- Reduced internal hold-up volumes
- Superior efficiency
- Closer approach temperatures
- Higher working pressures
- Reduced fouling
- Highly flexible design for manufacturing
- Cost effective
- Wide variety of connection styles and sizes
- High technology manufacturing

Brazed plate heat exchanger, type B3 range

Application

The B3 brazed plate heat exchangers BPHE are the ideal choice for chillers, heat pumps, economizers, desuperheaters and can be used for numerous other applications. The heat exchanger is designed to combine high thermal efficiency with energy savings.

Portfolio overview

Table 1: Designation

a b c d e
 (B3) - (113) - (50) - (4.5) - (HDQ)

a Brazed plate heat exchanger B3: Copper brazed B4: Nickel brazed	e Plate design L: L-type M: M-type H: H-type
b Platform* 012, 014, 018, 027, 030, 052... *heat exchanging surface per plate 1/1000 m ²	Configuration Omit: single D: Dual circuit
c Number of plates	Specific duty Omit: without distributor Q: with distributor
d Pressure Service (MPa)	

BPHE Data	B3-012	B3-014	B3-018	B3-020	B3-027	B3-030	B3-052
Cooling Capacity / Heat Load (kW)	0.5 - 4	0.5 - 5	2 - 10	2 - 10	5-15	3-30	10-60
Design temperature (°C)	-196 / 200	-196 / 200	-196 / 200	-196 / 200	-196 / 200	-196 / 200	-196 / 200
Standard Design pressure (bar)	10	30	30	30	30	30	30
High Design pressure (bar)	30	45	45	40	45	45	45
Distribution						Q	Q
Dual circuit							
Dual circuit back to back		X		X	X	X	X
Channel pattern	H	H, L, M	H	H, L, M	H, L, M	H	H, L
Max. number of plates	50	60	60	60	150	150	150
Height / Width (mm)¹	186 / 72	207/77	231/90	314/72	311/111	325/95	527/111
Weight (kg)²	0.6+0.044xN	0.365+0.05xN	1.1+0.055xN	0.44+0.076xN	1.2+0.13xN	1+0.09xN	1.8+0.23xN
Channel volume (L)	0.018	0.02	0.036	0.04	0.05	0.028	0.094
Standard plate material³	AISI 304	AISI 304	AISI 316L	AISI 304	AISI 316L AISI 304L	AISI 316L AISI 304L	AISI 316L AISI 304L
Nickel Braze Option		X	X				

BPHE Data	B3-095	B3-095B	B3-113	B3-136	B3-210	B3-210B	B3-260B
Cooling Capacity / Heat Load (kW)	30 - 200	30 - 200	60 - 200	60 - 200	150 - 450	150 - 450	150 - 500
Design temperature (°C)	-196 / 200	-196 / 200	-196 / 200	-196 / 200	-196 / 200	-196 / 200	-196 / 200
Standard Design pressure (bar)	30	30	30	30	30	30	20
High Design pressure (bar)	45		45		45	45	
Distribution	Q		Q		Q	Q	
Dual circuit			D		D	D	
Dual circuit back to back	X	X					
Channel pattern	H, L, M	H, L, M	H	H	H	H	H

Brazed plate heat exchanger, type B3 range

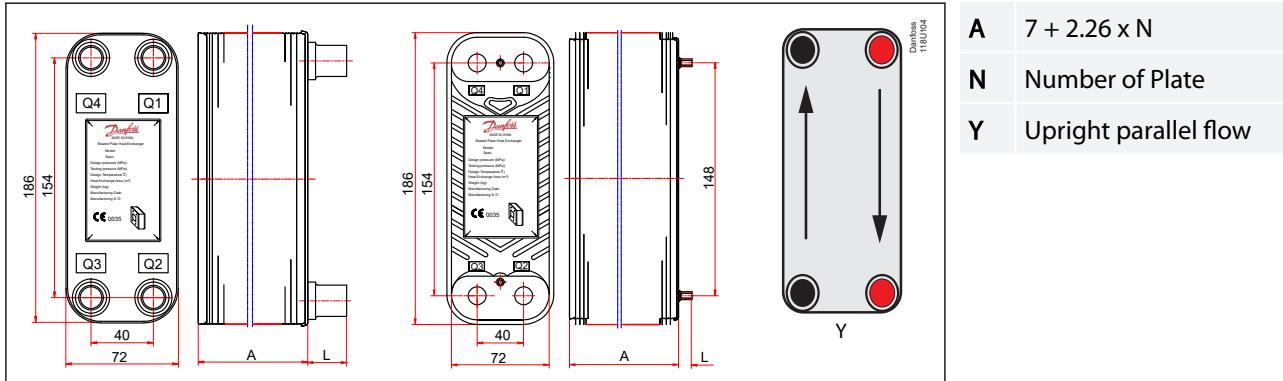
BPHE Data	B3-095	B3-095B	B3-113	B3-136	B3-210	B3-210B	B3-260B
Max. number of plates	250	250	200	200	250	250	250
Height / Width (mm)¹	615 / 188	615 / 188	490 / 250	492 / 252	739 / 322	739 / 322	796 / 363
Weight (kg)²	5.64+0.4xN	5.64+0.41xN	6.5+0.38xN	6.5+0.38xN	13+0.8xN	13+0.8xN	20 + 0.97xN
Channel volume (L)	0.21	0.25	0.16	0.194	0.4	0.4	0.6
Standard plate material³	AISI 316L AISI 304L	AISI 316L AISI 304L	AISI 316L	AISI 316L	AISI 316L	AISI 316L	AISI 316L
Nickel Braze Option							

Product specification

Dimensions

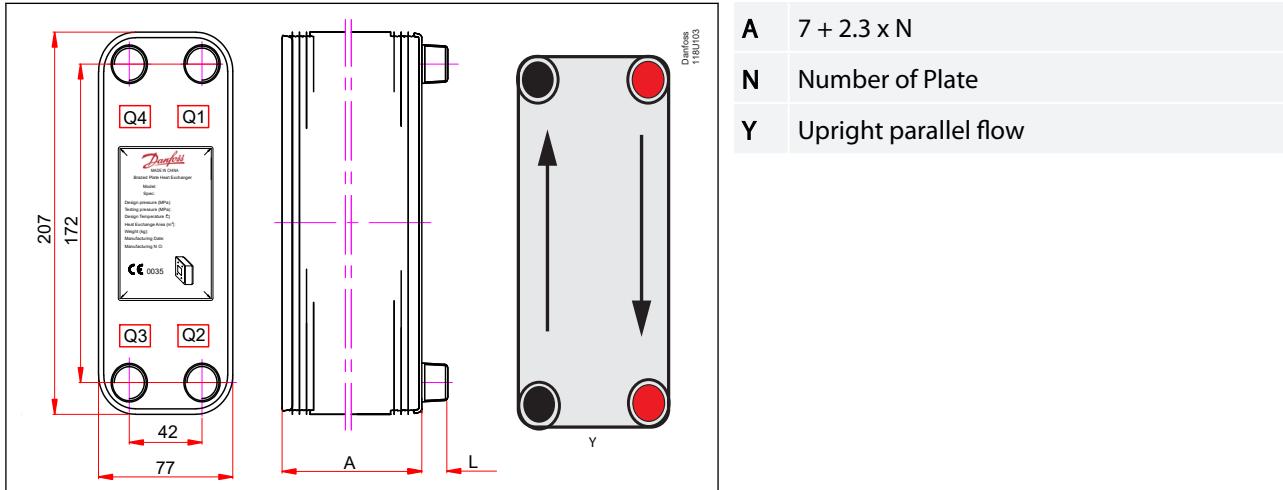
B3-012 brazed plate heat exchanger BPHE

Figure 1: B3-012 brazed plate heat exchanger BPHE



B3-014 brazed plate heat exchanger BPHE

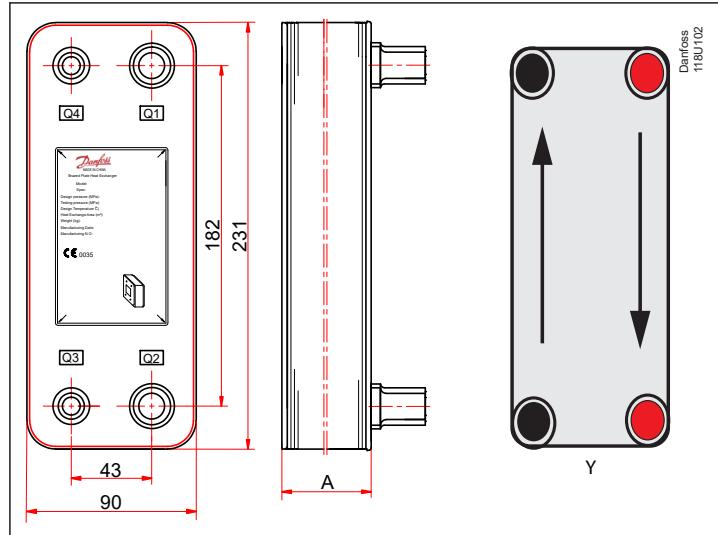
Figure 2: B3-014 brazed plate heat exchanger BPHE



Brazed plate heat exchanger, type B3 range

B3-018 brazed plate heat exchanger BPHE

Figure 3: B3-018 brazed plate heat exchanger BPHE



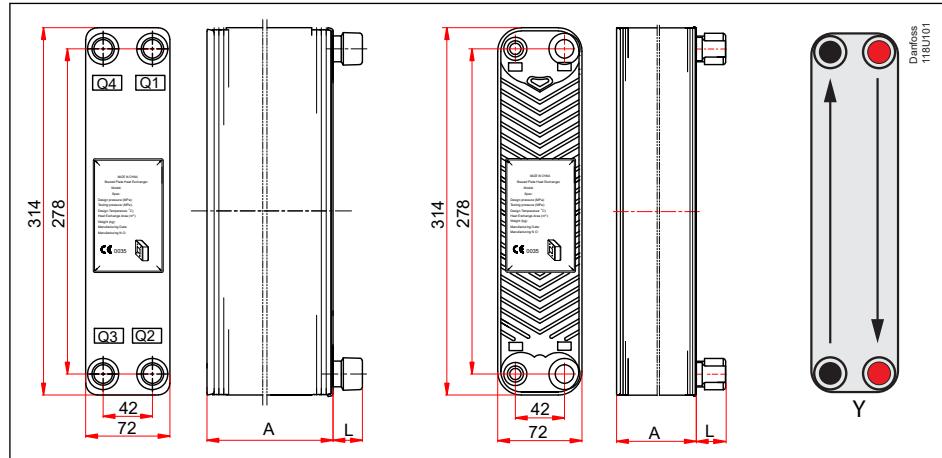
A $10 + 2.26 \times N$

N Number of Plate

Y Upright parallel flow

B3-020 brazed plate heat exchanger BPHE

Figure 4: B3-020 brazed plate heat exchanger BPHE



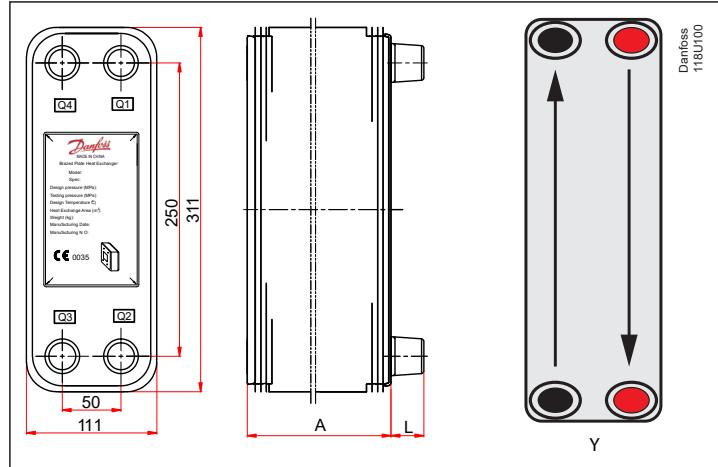
A $7 + 2.26 \times N$

N Number of Plate

Y Upright parallel flow

B3-027 brazed plate heat exchanger BPHE

Figure 5: B3-027 brazed plate heat exchanger BPHE



A $9 + 2.36 \times N$

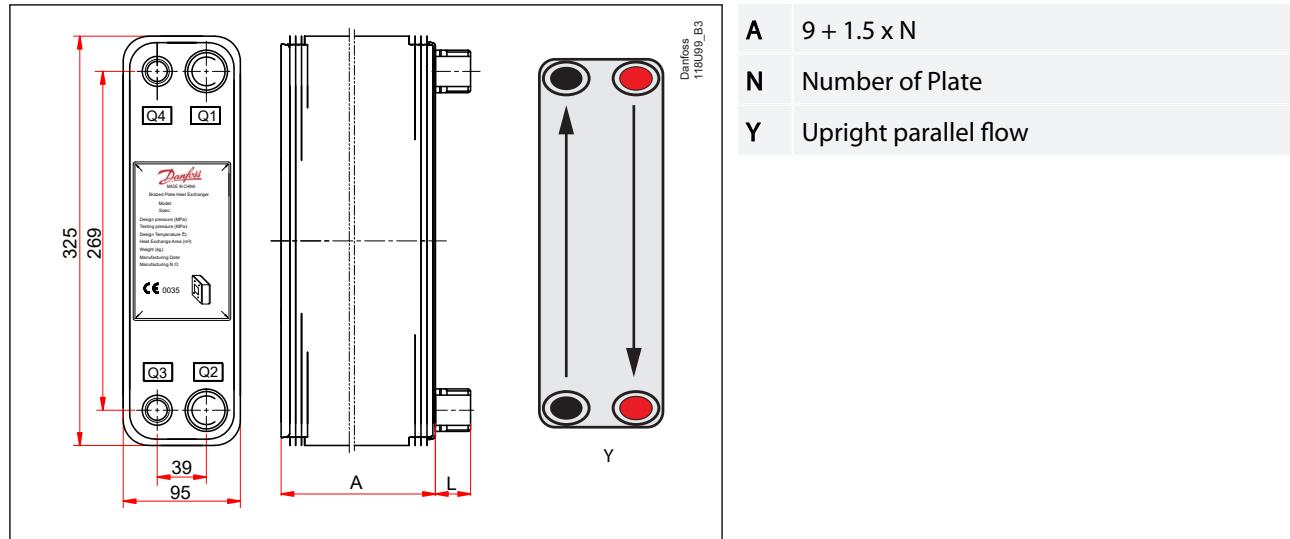
N Number of Plate

Y Upright parallel flow

Brazed plate heat exchanger, type B3 range

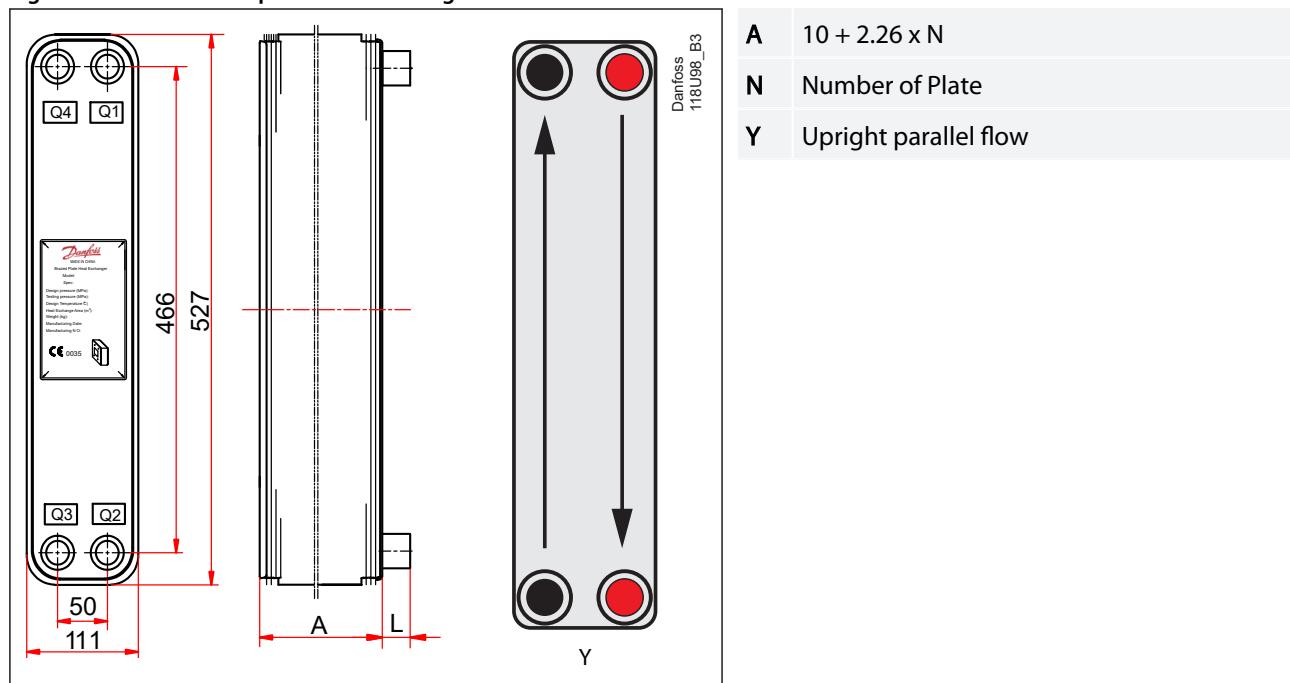
B3-030 brazed plate heat exchanger BPHE

Figure 6: B3-030 brazed plate heat exchanger BPHE



B3-052 brazed plate heat exchanger BPHE

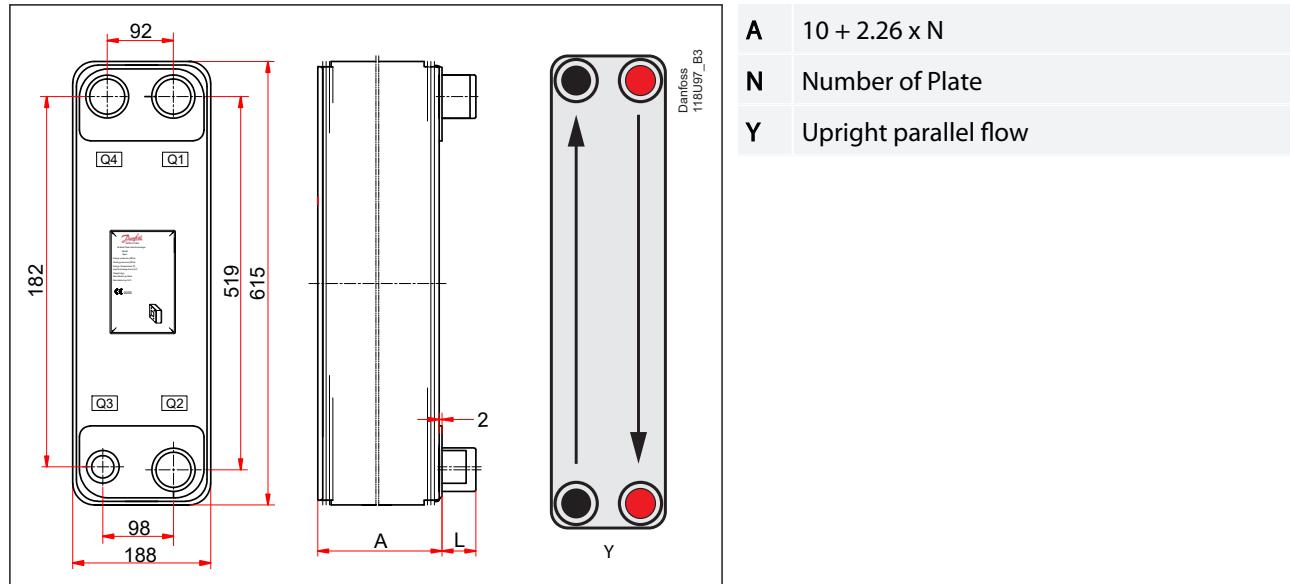
Figure 7: B3-052 brazed plate heat exchanger BPHE



Brazed plate heat exchanger, type B3 range

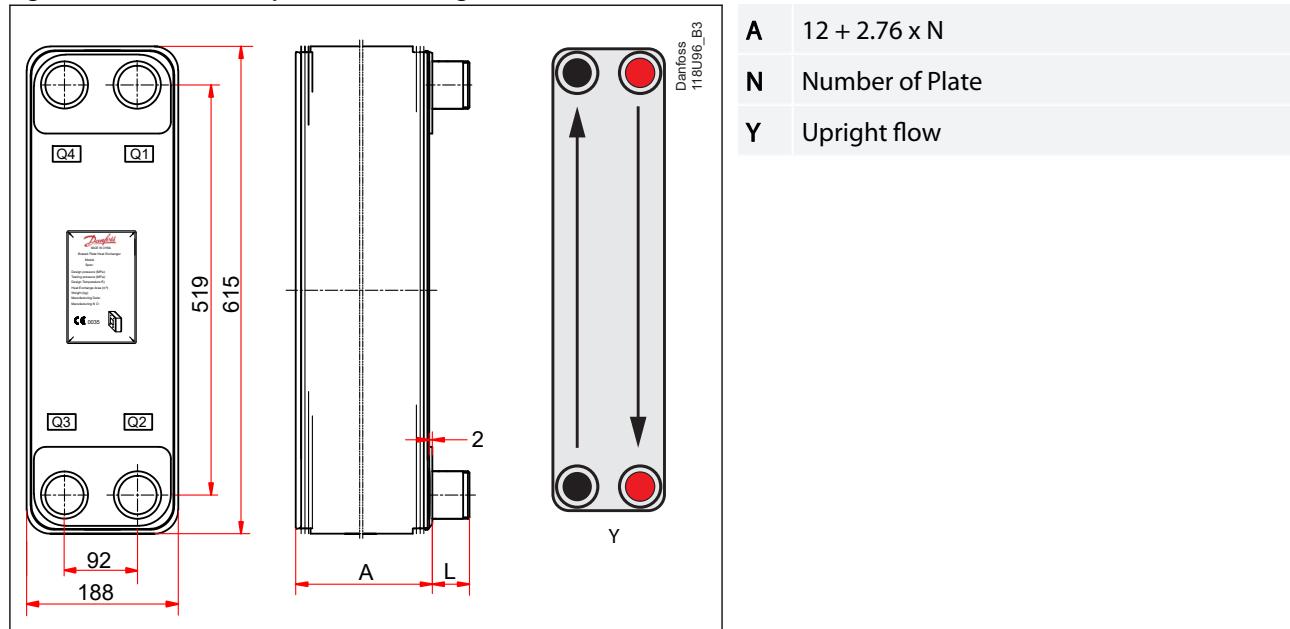
B3-095 brazed plate heat exchanger BPHE

Figure 8: B3-095 brazed plate heat exchanger BPHE



B3-095B brazed plate heat exchanger BPHE

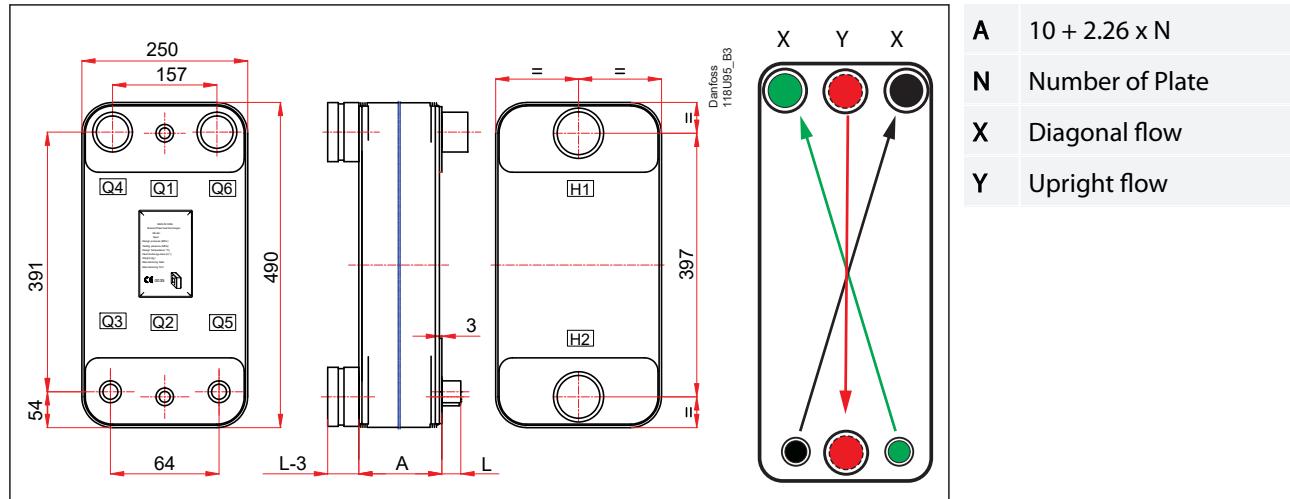
Figure 9: B3-095B brazed plate heat exchanger BPHE



Brazed plate heat exchanger, type B3 range

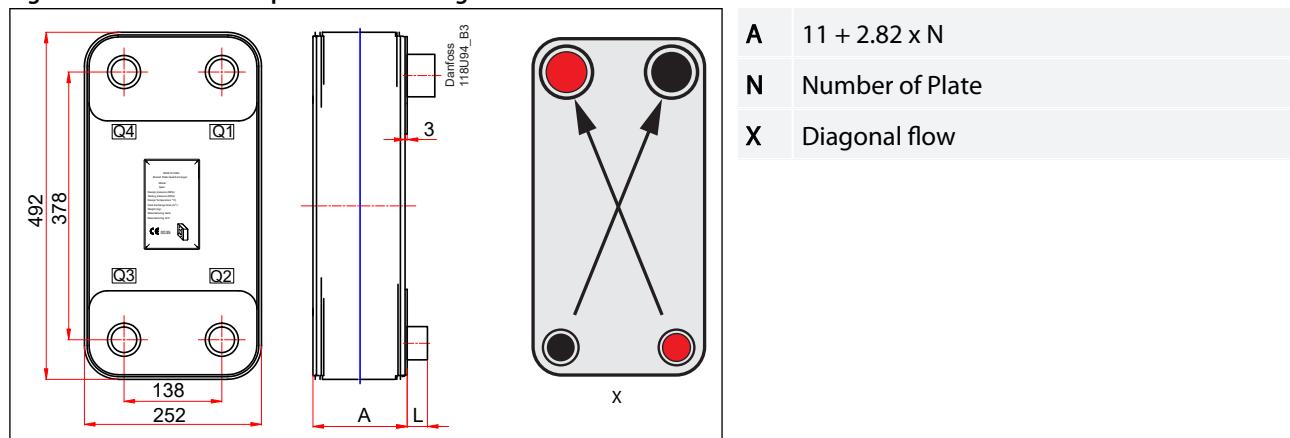
B3-113 brazed plate heat exchanger BPHE

Figure 10: B3-113 brazed plate heat exchanger BPHE



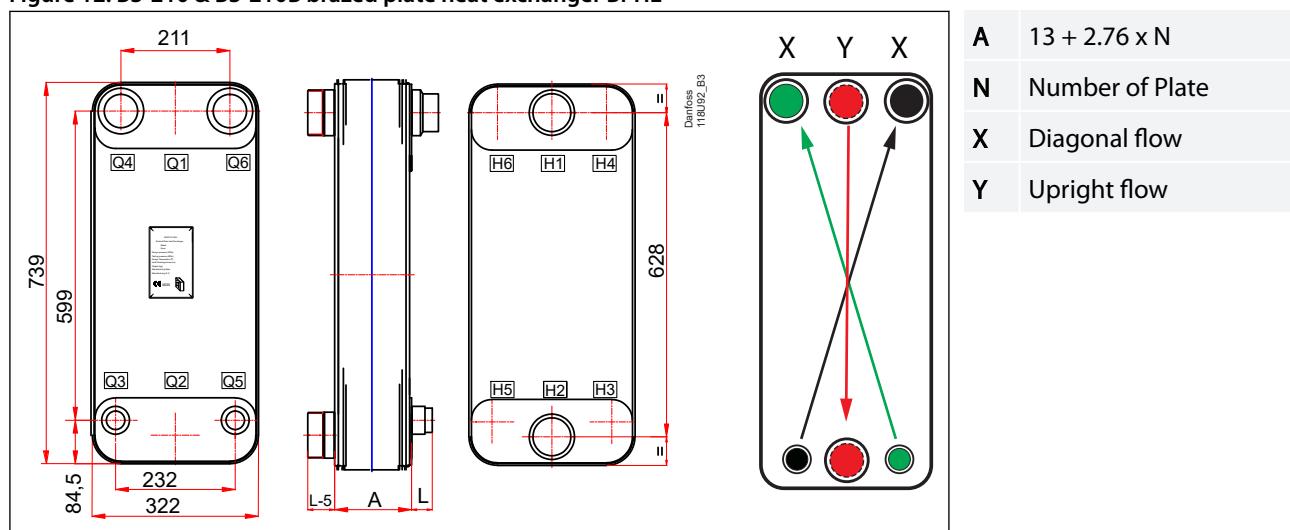
B3-136 brazed plate heat exchanger BPHE

Figure 11: B3-136 brazed plate heat exchanger BPHE



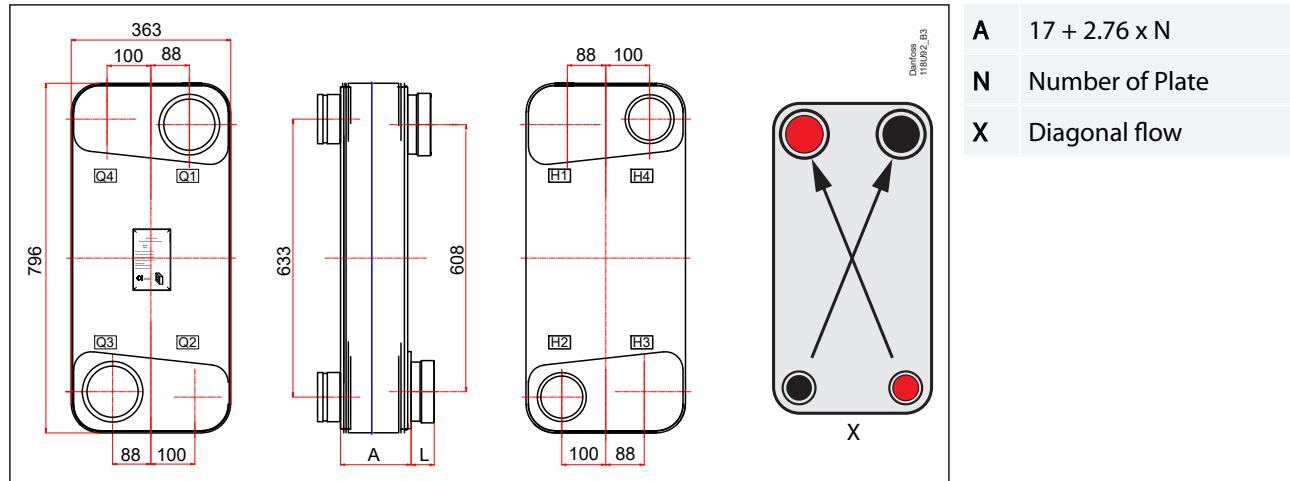
B3-210 & B3-210B brazed plate heat exchanger BPHE

Figure 12: B3-210 & B3-210B brazed plate heat exchanger BPHE



B3-260B brazed plate heat exchanger BPHE

Figure 13: B3-260B brazed plate heat exchanger BPHE



A	$17 + 2.76 \times N$
N	Number of Plate
X	Diagonal flow

Ordering

Global or local standard code numbers can be accessed via Store.Danfoss.com on local subsites, with full set of technical data as well as relevant assets such as documentation and drawings. Since the portfolio may contain different types depending on country, this document contains only a summarized list of standard code numbers with a few data relevant for the product selection.

Configuring and calculating products

All models of the B3 range can be easily customized based on the application needs; model size can be evaluated using Hexact software.

For details, product configuration and code creation please contact your Danfoss Sales representative.

Mechanical connections

Table 2: Connections data

Connection Type	Connec-tionSize (inch)	B3-012 B3-014 B3-020	B3-018	B3-030	B3-027 B3-052	B3-095 B3-095B	B3-113	B3-113B	B3-136	B3-210	B3-260B
BSP-male	G1/2	X	X	X	X	X					
	G3/4	X	X	X	X	X	X	X	X	X	
	G1			X	X	X	X	X	X	X	
	G1 1/4				X	X	X	X	X	X	
	G1 1/2					X	X	X	X	X	
	G2					X	X	X	X	X	X
	G2 1/2								X	X	X
	G3								X	X	X
BSP-female	G1/4	X	X	X	X						
	G1/2	X	X	X	X	X	X	X	X	X	
	G3/4			X	X	X	X	X	X	X	
	G1			X	X	X	X	X	X	X	
	G1 1/4				X	X	X	X	X	X	
DIN-male	R1/2	X	X	X	X	X					
	R3/4	X	X	X	X	X	X	X	X	X	
	R1			X	X	X	X	X	X	X	
	R1 1/4				X	X	X	X	X	X	
	R1 1/2					X	X	X	X	X	
	R2					X	X	X	X	X	X
	R2 1/2								X	X	X
	R3								X	X	X

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Connection Type	Connec-tionSize (inch)	B3-012 B3-014 B3-020	B3-018	B3-030	B3-027 B3-052	B3-095 B3-095B	B3-113	B3-113B	B3-136	B3-210	B3-260B
DIN-female	R1/4	X	X	X	X						
	R1/2	X	X	X	X	X	X	X	X	X	
	R3/4			X	X	X	X	X	X	X	
	R1				X	X	X	X	X	X	
	R1 1/2					X	X	X	X	X	
NPT	1/2	X	X	X	X	X					
	3/4	X	X	X	X	X	X	X	X	X	
	1			X	X	X	X	X	X	X	
	1 1/4				X	X	X	X	X	X	
	1 1/2					X	X	X	X	X	
	2					X	X	X	X	X	X
	2 1/2						X	X	X	X	X
	3								X	X	X
FPT	1/4	X	X	X	X						
	1/2	X	X	X	X	X	X	X	X	X	
	3/4			X	X	X	X	X	X	X	
	1				X	X	X	X	X	X	
SWT	1/4	X	X	X	X						
	3/8	X	X	X	X	X					
	1/2	X	X	X	X	X					
	5/8	X	X	X	X	X					
	3/4	X	X	X	X	X	X	X	X	X	
	7/8	X	X	X	X	X	X	X	X	X	
	1			X	X	X	X	X	X	X	
	1 1/8			X	X	X	X	X	X	X	
	1 3/8				X	X	X	X	X	X	
	1 5/8					X	X	X	X	X	
	2 1/8					X	X	X	X	X	
	2 5/8								X	X	
	3 1/8									X	
	4										
Victaulic	5										
	2					X	X	X	X	X	X
	2 1/2					X	X	X	X	X	X
	3									X	X
	4										X
	5										X

Note: The list above does not include all connections available, but part of connections in use

The list above does not include all connections available, but part of connections in use. Please contact your Danfoss sales representative for more information.

Accessories and spare parts

B3 products are not serviceable, i.e. cannot be taken apart and repaired, and there are no spare parts program. As for accessories, stud bolts, feet on front and/or back cover plates for mounting support and handling are available upon request.

Table 3: Stud bolts:

	Stud bolts position	Bolt size
B3-012	70 mm, middle	M6 x 20mm
B3-014	70 mm, middle	M6 x 20mm
B3-018	100 mm, middle	M6 x 20mm
B3-020	151 mm, middle	M6 x 20mm
B3-027	120mm, middle 89 x 64mm, middle	M8 x 20mm M8 x 25mm M8 x 30mm

Brazed plate heat exchanger, type B3 range

	Stud bolts position	Bolt size
B3-030	120mm, middle 160mm, middle	M8 x 20mm M8 x 25mm M8 x 30mm
B3-052	327mm, middle 140 x 60 mm, middle	M8 x 20mm M8 x 25mm M8 x 30mm
B3-095	230 x 92mm, middle 140 x 100mm, middle	M8 x 20mm M8 x 25mm M8 x 30mm
B3-095B	230 x 92mm, middle 140 x 100mm, middle	M8 x 20mm M8 x 25mm M8 x 30mm
B3-113	300 x 110mm, middle 140 x 100mm, middle	M8 x 20mm M8 x 25mm M8 x 30mm
B3-136	300 x 110mm, middle 140 x 100mm, middle	M8 x 20mm M8 x 25mm M8 x 30mm
B3-210	140 x 127mm, middle 140 x 100mm, middle	M10 x 25mm M12 x 35mm
B3-210B	140 x 127mm, middle 140 x 100mm, middle	M10 x 25mm M12 x 35
B3-260B	140 x 127mm, middle 140 x 100mm, middle	M10 x 25mm M12 x 35mm

Contact your Danfoss sales representative for further information.

Certificates, declarations, and approvals

The list contains all certificates, declarations, and approvals for this product type. Individual code number may have some or all of these approvals, and certain local approvals may not appear on the list.

Some approvals may change over time. You can check the most current status at danfoss.com or contact your local Danfoss representative if you have any questions.

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