

ENGINEERING
TOMORROW

Danfoss

Catalog

Your Personal Catalog with **Plate Heat Exchangers** Data Sheets

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www.district-heating.danfoss.com

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Heat Exchangers

Heat exchanger XB 61

Micro plate heat exchanger XB66H

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Micro Plate Heat Exchanger (MPHE) XB37

Plate heat exchanger XGF 100

Plate heat exchanger XGM032

XB 12

XB Brazed heat exchanger

XB05M

XG Gasketed heat exchanger

Data sheet

Micro Plate Heat Exchanger (MPHE): XB61

Description



Micro Plate Heat Exchangers - a revolutionary technology from Danfoss. Characterized by their unique plate pattern, MPHEs enable heat to be transferred more effectively than any previous model of heat exchangers.

Benefits:

- Energy and cost savings
- Better heat transfer
- Lower pressure loss
- More flexible design
- Longer life time

more on:

MPHE.danfoss.com

XB61 is copper brazed heat exchanger, designed and configured for District Heating, District Cooling and other Heating applications.

Approval:

Pressure Equipment Directive (PED) 97/23/EC.

Ordering

1-pass brazed heat exchangers type XB61-1

Picture	No. of plates, n	XB 61L-1SB	XB 61M-1SB	XB 61H-1SB
		Thread (G 2A)		
		Code No.		
	30	004B1906	004B1913	004B1925
	36	004B1907	004B1914	004B1926
	40	004B1908	004B1915	004B1927
	50	004B1909	004B1916	004B1928
	60	004B1910	004B1917	004B1929
	70	004B1911	004B1918	004B1930
	80	004B1912	004B1919	004B1931
	90	004B3436	004B3444	004B3452
	100	004B3437	004B3445	004B3453
	110	004B3438	004B3446	004B3454
	120	004B3439	004B3447	004B3455
	140	004B3440	004B3448	004B3456
	160	004B3441	004B3449	004B3457
	180	004B3442	004B3450	004B3458
	200	004B3443	004B3451	004B3459

Note: Brackets must be ordered separately, the so-called SB brackets.

Accessories - Bracket SB ¹⁾

Picture	Type coverage (plate nos)			Code No.
	H	M	L	
	30-90	30-70	30-60	004B1788
	91-180	71-160	61-120	004B1789
	181-200	161-200	121-200	004B1790

¹⁾ for dimensions, see page 2

Accessories - Insulations

Type coverage (plate nos)			Code No.
H	M	L	
30-90	30-70	30-50	004B1655
91-160	71-120	51-100	004B1656
161-200	121-180	101-140	004B1657
-	181-200	141-200	004B1658

Accessories - Tailpieces

Soldering	Code No. ²⁾
28 mm pipes	004B2910
35 mm pipes	004B2911
42 mm pipes	004B2912

²⁾ Set of two pieces.

Weld-on	Code No. ²⁾
DN 32	004B2907
DN 40	004B2908
DN 50	004B2909

Technical data

Heat exchanger XB61-1

Max working pressure	bar	25
Min. / Max. temperature	°C	-10/180
Flow medium	Water / Water	
Plate corrugation	H / M / L	
Voume / Channel	Ltr	H: 0,140 / M: 0,175 / L: 0,234
Primary side vol.:		(n / 2) - 1 x vol/channel
Connections	G 2 A x 52 mm (DIN ISO 228/1)	
Weight	kg	9 + 0,3*n
Materials		
Plate material	Stainless steel, mat. no. 1.4404 (316L)	
Brazing	Copper	

n = Number of plates

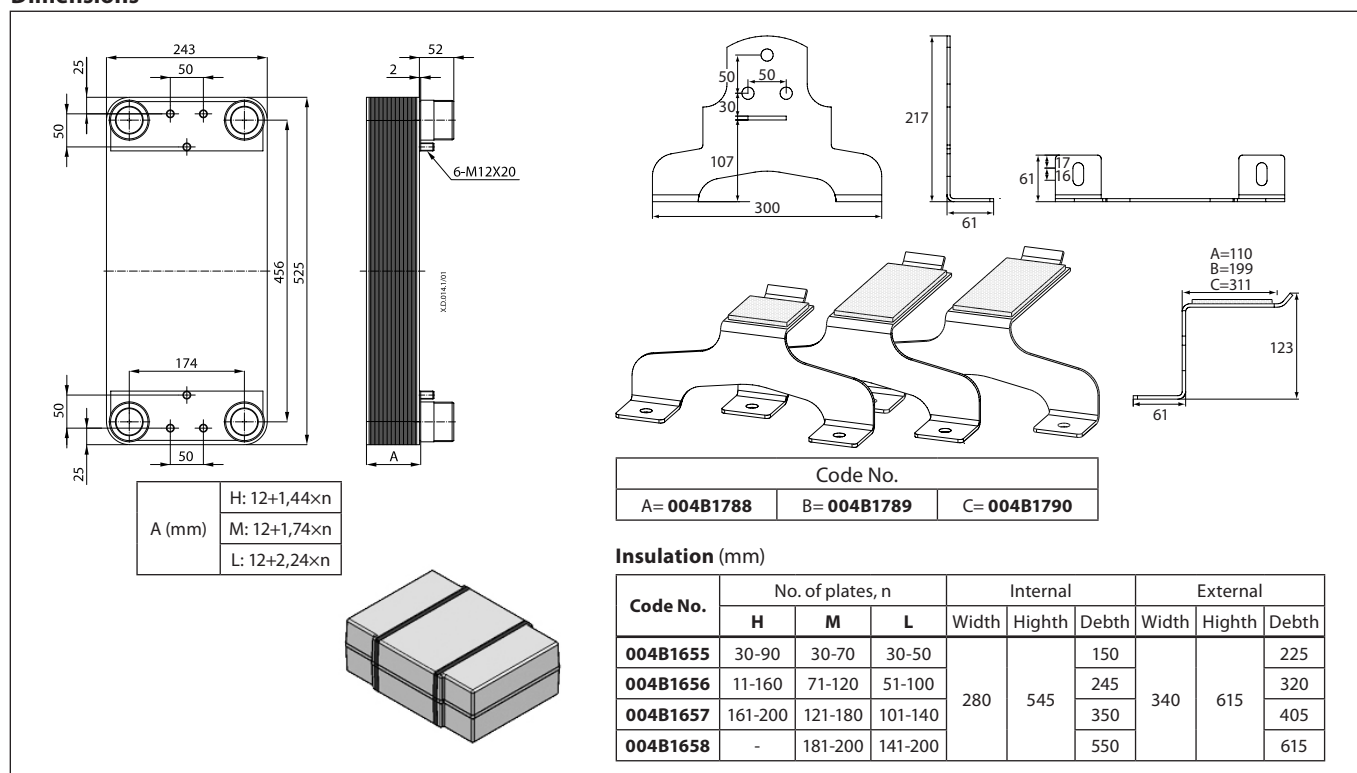
Insulation

Type	Polyurethane shell with polystyrene cover		
Core	Polyurethane	mm	27 - 30
	Heat conductivity λ	W/mK	0.029
	Max. temperature	°C	130 (permanent); short-term: 150
Cover	Polystyrene, light grey RAL 7040	mm	0.8 - 3.0

Note:

For more details about insulation please contact your Danfoss sales representative.

Dimensions



Data sheet

Micro Plate Heat Exchanger (MPHE): XB66H

Description



Micro Plate Heat Exchangers - a revolutionary technology from Danfoss.

Characterized by their unique plate pattern, MPHEs enable heat to be transferred more effectively than any previous model of heat exchangers.

Benefits:

- Energy and cost savings
- Better heat transfer
- Lower pressure loss
- More flexible design
- Longer life time

more on:

MPHE.danfoss.com

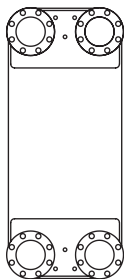
XB66 is copper brazed heat exchanger, designed and configured for District Heating, District Cooling and other Heating applications.

Approval:

Pressure Equipment Directive (PED) 97/23/EC.

Ordering

Heat exchanger XB66H-1

Picture	No. of plates, n	Code No.
	40	004B1987
	50	004B1988
	60	004B1989
	70	004B1990
	80	004B1991
	90	004B1992
	100	004B1993
	110	004B1994
	120	004B1995
	140	004B1996
	160	004B1997
	180	004B1998
	200	004B1999

Note: Brackets has to be ordered separately.

XB66 is provided with compact flanges, installing with standard flanges is not possible. Recommend Danfoss counter flanges.

Accessories - Insulations

Type coverage (plate nos)	Code No.
40-90	004B3542
91-200	004B3543
/	004B3544

Accessories - Bracket SB

Type coverage (plate nos)	Code No.
40-90	004B1788
91-200	004B1789
/	004B1790

Accessories - Counter-flanges

Type	Code No.
DN65 compact flange, for DHW ¹⁾	004B3545
DN65 compact flange, for Heating ²⁾	004B3546

¹⁾ 2 pcs of mild steel flanges, 2pcs 1.4404 flanges (Hot water) including o-rings drinking water: FDA: 21CFR Ch I § 177.2600

²⁾ Counter flanges of mild steel in sets of 4 pcs

Data sheet

Micro Plate Heat Exchanger (MPHE): XB66H

Technical data

Heat exchanger XB66H

Max working pressure	PN	25
Min. / Max. temperature	°C	-10 / 180
Flow medium	DH: Circulation water / glycolic water up to 50% DC: ethylene-, propylene-glycolic water, ethanol-water solutions and other suitable heat transfer media. (Please contact your Danfoss representative).	
Plate corrugation	H	
Voume / Channel	Ltr	H: 0,219
Primary side vol.:		(n/2)-1 * vol/channel
Connections	Compact Flange DN65 1.4404 PN25	
Weight	kg	13,6+0,43*n
Materials		
Plate material	Stainless steel, mat. no. 1.4404 (316L)	
Brazing	Copper	

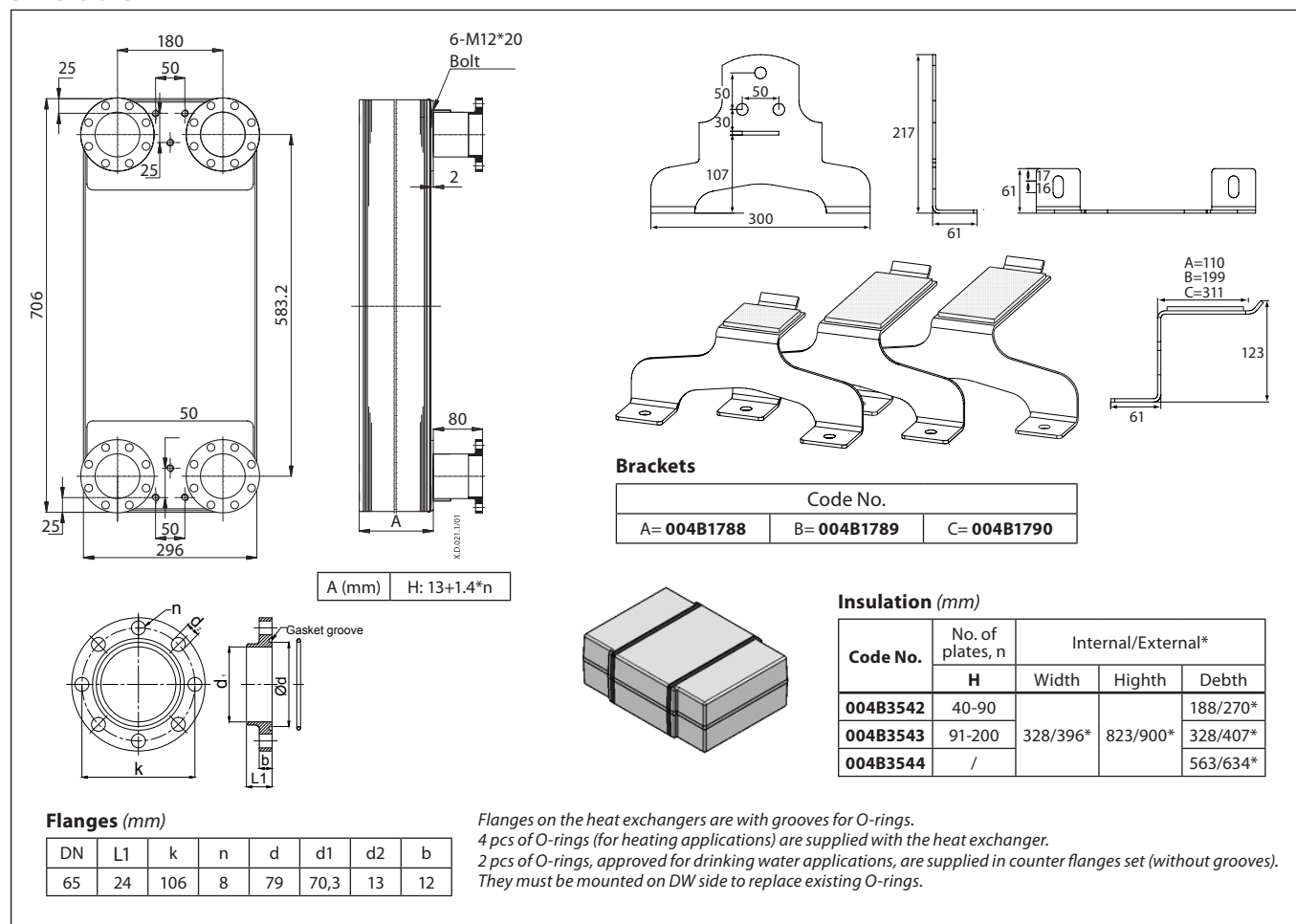
Insulation

Type	Polyurethane shell with polystyrene cover	
Core	Polyurethane	20-33 mm
	Heat conductivity λ	0.029 W/mK
Cover	Max. temperature	130°C (permanent); short-term: 150°C
	Polystyrene, light grey RAL 7040	0.8-3.0 mm

Note:

For more details about insulation please contact your Danfoss sales representative.

Dimensions



Data sheet

Micro Plate Heat Exchanger (MPHE): XB06

Description



Micro Plate Heat Exchangers - a revolutionary technology from Danfoss. Characterized by their unique plate pattern, MPHEs enable heat to be transferred more efficient than any previous model of heat exchangers.

Benefits:

- Energy and cost savings
- Better heat transfer
- Lower pressure loss
- More flexible design
- Longer life time

more on:
MPHE.danfoss.com

XB 06 is copper brazed heat exchanger, designed and configured for District Heating, District Cooling and other Heating applications.

Approval:

Pressure Equipment Directive (PED) 97/23/EC.

Ordering

1-pass heat exchanger XB 06

Picture	No. of plates, n	Connection	XB 06L-1	XB 06H-1	XB 06H+
			Code No.		
	8	Thread G ¾ A	004B2024	004B2036	004B1206
	10		004B2025	004B2037	004B1207
	16		004B2026	004B2038	004B1209
	20		004B2027	004B2039	004B1211
	26		004B2028	004B2041	004B1212
	30		004B2029	004B2042	004B1214
	36		004B2030	004B2043	004B1216
	40		004B2031	004B2044	004B1217
	50		004B2032	004B2046	004B1219
	60		004B2033	004B2047	004B1221
	70		004B2034	004B2048	004B1222
	80		-	-	004B1223

Ordering (continued)
Accessories-Tailpieces

Picture	Description	Connection	Code No. ¹⁾
	Solder tailpieces	G ¾ A/15 mm	004B2945
		G ¾ A/18 mm	004B2946
	Weld-on tailpieces	G ¾ A/DN 20	004B2944
	Threaded tailpieces	G ¾ A/G ¾ A	004B2947
		G ¾ A/G 1 A	004B2953

¹⁾ One set contains 2 tailpieces with union nuts and gaskets

Accessories-Insulation XB 06-1

Picture	No. of plates, n	Code No.
	8-26	004B1191
	30-40	004B1192
	50-70	004B1193

Accessories-Bracket

Picture	Code No.
	004B2948

Accessories-Insulation XB 06H+

Picture	No. of plates, n	Code No.
	8-36	004B1191
	40-70	004B1192
	80	004B1193

Technical data

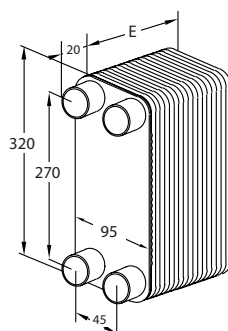
Type		XB 06L-1	XB 06H-1	XB 06H+
Max. working pressure	bar	25 (16) ¹⁾		25
Min. / Max. temperature	°C	-10/180		
Flow medium		DH: Circulation water / glycolic water up to 50% DC: ethylene-, propylene-glycolic water, ethanol-water solutions and other suitable heat transfer media. (Please contact your Danfoss representative).		
Volume / Channel	Ltr	0,034	0,023	0,018
Connection type		Cylindrical external thread acc. to DIN ISO 228/1		
Connection size		G ¾ A		
Weight	kg	0,67 + 0,08 × n		0,6 + 0,07 × n
Materials				
Plate		Stainless steel, mat. no. 1.4404		
Brazing		Copper		

Insulation

Type		PU (Polyurethane)	
Wall thickness	mm	20	
Heatconductivity, λ	W/mK	0,035	
Max temperature	Permanent	°C	130
	Short term peak		160

¹⁾ 16 bar versions are available on enquiry

Dimension

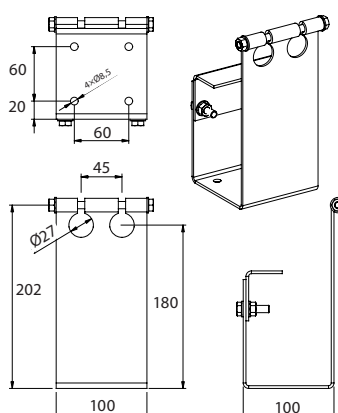


Type	Connection	E (mm)	Weight empty (kg)
XB 06 L-...	G ¾ A ¹⁾	$7 + 1,6 \times n$	$0,67 + n \times 0,08$
XB 06 H-...		$7 + 1,25 \times n$	
XB 06H+ ...		$7 + 0,95 \times n$	$0,6 + n \times 0,07$

n = number of plates

¹⁾ Cylindrical external thread acc. to DIN ISO 228/1

Mounting brackets






Insulation XB 06-1

No. of plates	A	B	E	Code No.
	mm			
8-26	368	140	98	004B1191
30-40		145	138	004B1192
50-70		150	168	004B1193

Insulation XB 06H+

No. of plates	A	B	E	Code No.
	mm			
8-36	368	140	98	004B1191
40-70		145	138	004B1192
80		150	168	004B1193

Tailpieces

Picture	Description	Connection	a	b	SW ¹⁾	Code No.
			mm			
	Solder tailpieces	G ¾ A / 15 mm	15	35	32	004B2945
		G ¾ A / 18 mm	18	35	32	004B2946
	Weld-on tailpieces	G ¾ A / DN 20	21,2	35	32	004B2944
	Threaded tailpieces	G ¾ A / G ¾ A	¾"	40	32	004B2947
		G ¾ A / G 1 A	1"	22	32	004B2953

¹⁾ Union nut, width across flats

Data sheet

Micro Plate Heat Exchanger (MPHE): XB59

Description



Micro Plate Heat Exchangers - a revolutionary technology from Danfoss.

Characterized by their unique plate pattern, MPHEs enable heat to be transferred more efficient than any previous model of heat exchangers.

Benefits:

- Energy and cost savings
- Better heat transfer
- Lower pressure loss
- More flexible design
- Longer life time

more on:

MPHE.danfoss.com


XB59 is copper brazed heat exchanger, designed and configured for District Heating, District Cooling and other Heating applications.

Approval:

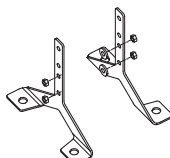
Pressure Equipment Directive (PED) 97/23/EC.

Ordering

Heat exchanger XB59M-1

Picture	No. of plates, n	Code No.
	30	004B1920
	36	004B1921
	40	004B1922
	50	004B1923
	60	004B1932
	70	004B1933
	80	004B1934
	90	004B1936
	100	004B1937
	110	004B1938
	120	004B1939
	140	004B1940
	160	004B1941
	180	004B1942
	200	004B1943

Accessories - Bracket set XB59

Picture	Code No.
	004B1245

Accessories - Insulations

Type coverage (plate nos)	Code No.
30-50	004B1651
51-100	004B1652
101-140	004B1653
141-200	004B1654

Accessories - Tailpieces

Solder	Code No. *
28 mm pipes	004B2910
35 mm pipes	004B2911
42 mm pipes	004B2912

Weld-on	Code No. *
DN 32	004B2907
DN 40	004B2908
DN 50	004B2909

* Set of two pieces.

Technical data

Heat exchanger XB59

Max working pressure	bar	25
Min. / Max. temperature	°C	-10/180
Flow medium	DH: Circulation water / glycolic water up to 50% DC: ethylene-, propylene-glycolic water, ethanol-water solutions and other suitable heat transfer media (please contact your Danfoss representative).	
Plate corrugation		M
Volume / Channel	Ltr	0,151
Connections	mm	G 2 A x 52 (DIN ISO 228/1)
Weight	kg	7 + 2,6 × n
Materials		
Plate material		Stainless steel, mat. no. 1.4404
Brazing		Copper

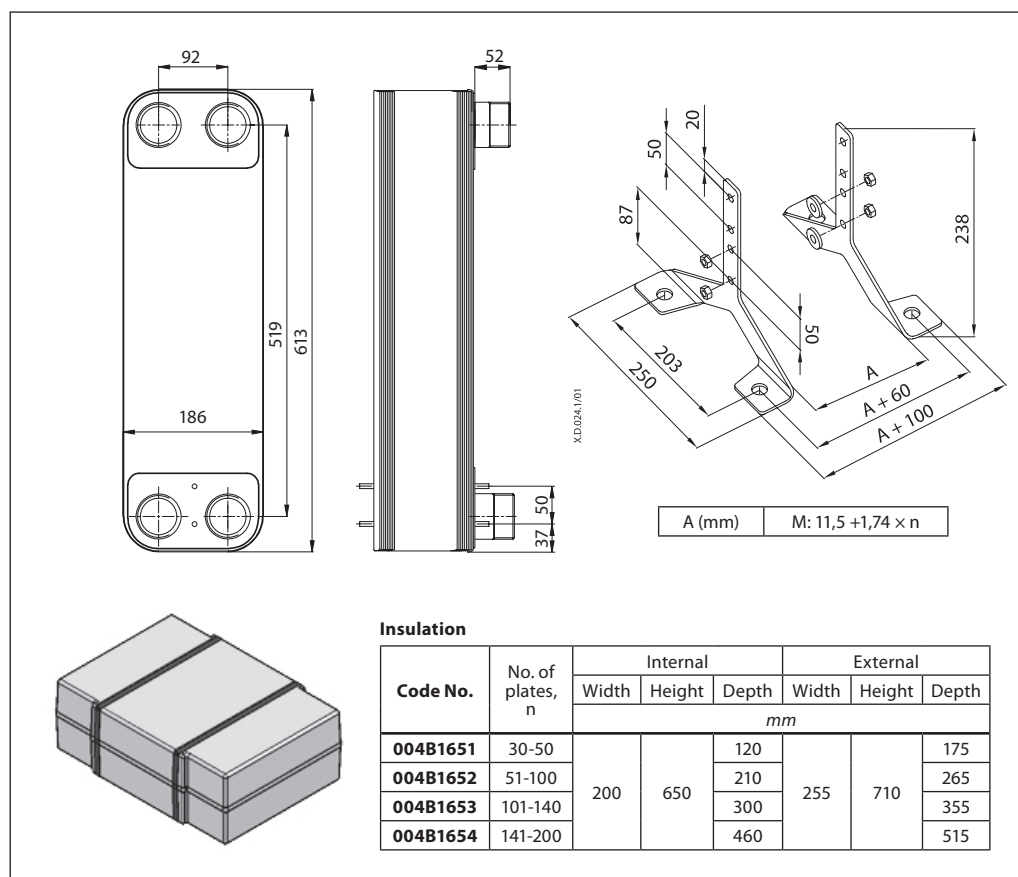
Insulation

Type	Polyurethane shell with Polystyrene cover		
Wall thickness	mm		27-30
Heat conductivity λ	W/mK		0,029
Max temperature	Permanent	°C	130
	Short term peak		150
Polystyrene, light grey RAL 7040	mm		0,8-3,0

Note:

For more details about insulation please contact your Danfoss sales representative.

Dimensions



Data sheet

Micro Plate Heat Exchanger (MPHE): XB37

Description



Micro Plate Heat Exchangers - a revolutionary technology from Danfoss.

Characterized by their unique plate pattern, MPHEs enable heat to be transferred more efficient than any previous model of heat exchangers.

Benefits:

- Energy and cost savings
- Better heat transfer
- Lower pressure loss
- More flexible design
- Longer life time

more on:

MPHE.danfoss.com

XB37 is copper brazed heat exchanger, designed and configured for District Heating, District Cooling and other Heating applications.

Approval:

Pressure Equipment Directive (PED) 97/23/EC.

Ordering

1-pass heat exchanger XB37

Picture	No. of plates, n	Connection	20 mm connection length			50 mm connection length		
			XB37L-1	XB37M-1	XB37H-1	XB37L-1	XB37M-1	XB37H-1
			Code No.			Code No.		
	10	Thread G1A	004H7270	004H7285	004H7300	004B1675	004B1690	004B1705
	16		004H7271	004H7286	004H7301	004B1676	004B1691	004B1706
	20		004H7272	004H7287	004H7302	004B1677	004B1692	004B1707
	26		004H7273	004H7288	004H7303	004B1678	004B1693	004B1708
	30		004H7274	004H7289	004H7304	004B1679	004B1694	004B1709
	36		004H7275	004H7290	004H7305	004B1680	004B1695	004B1710
	40		004H7276	004H7291	004H7306	004B1681	004B1696	004B1711
	50		004H7277	004H7292	004H7307	004B1682	004B1697	004B1712
	60		004H7278	004H7293	004H7308	004B1683	004B1698	004B1714
	70		004H7279	004H7294	004H7309	004B1684	004B1699	004B1715
	80		004H7280	004H7295	004H7310	004B1685	004B1700	004B1716
	90		004H7281	004H7296	004H7311	004B1686	004B1701	004B1717
	100		004H7282	004H7297	004H7312	004B1687	004B1702	004B1718
	110		004H7283	004H7298	004H7313	004B1688	004B1703	004B1719
	120		004H7284	004H7299	004H7314	004B1689	004B1704	004B1720

Accessories - Tailpieces

Picture	Description	Connection	Code No.
	Solder tailpieces	G 1 A/15mm	004B2904
		G 1 A/18mm	004B2905
		G 1 A/22mm	004B2906
	Weld-on tailpieces	G 1 A/DN15	004B2901
		G 1 A/DN20	004B2909
		G 1 A/DN25	004B2903
	Threaded tailpieces	G 1 A/G 3/4 A	004B2913

Accessories - Insulations

Picture	Type coverage (plate nos)			Code No.
	L	M	H	
	10-20	10-26	10-30	004B1721
	26-36	30-40	36-50	004B1722
	40-50	50-70	60-90	004B1723
	60-80	80-100	100-120	004B1725
	90-100	110-120	/	004B1726
	110-120	/	/	004B1727

Accessories - Bracket set

Picture	Code No.
	004B1728

Technical data

Heat exchanger XB37		XB37L	XB37M	XB37H
Max working pressure	bar	25		
Min. / Max. temperature	°C	-10/180		
Flow medium		DH: Circulation water / glycolic water up to 50% transfer media DC: ethylene-, propylene-glycolic water, ethanol-water solutions and other suitable heat transfer media. (Please contact your Danfoss representative).		
Volume / Channel	Ltr	0,102	0,070	0,057
Connection type		Cylindrical external thread acc. to DIN ISO 228/1		
Connection size		G 1 A		
Weight	kg	short / long connection: 2,24 + 0,16 × n / 2,6 + 0,16 × n		
Materials				
Plate material		Stainless steel, EN 1.4404 (AISI 316L)		
Brazing		Copper		

Insulation

Type	PU (Polyurethane)		
Wall thickness	mm	20	
Heat conductivity λ	W/mK	0,035	
Max. temperature	Permanent	°C	130
	Short term peak		150

Note:
For more details about insulation please contact your Danfoss sales representative.

Dimensions

Tailpieces

Picture	Description	Connection	a	b	SW ¹⁾	Code No.
			mm			
	Solder tailpieces	G 1 A/15mm	20	35	37	004B2904
		G 1 A/18mm	20	35	37	004B2905
		G 1 A/22mm	25,6	35	37	004B2906
	Weld-on tailpieces	G 1 A/DN15	21,3	40	37	004B2901
		G 1 A/DN20	26	49,5	41	004B2909
		G 1 A/DN25	33,5	40	37	004B2903
	Threaded tailpieces	G 1 A/G 3/4 A	3/4"	35	37	004B2913

¹⁾ Union nut, width across flats

Insulation

A	B	E	Code No.
mm			
572	168	117	004B1721
	170	155	004B1722
	180	200	004B1723
		250	004B1725
	190	305	004B1726
	200	350	004B1727

E (mm)

	E (mm)
L	10 + 2,21 × n
M	10 + 1,68 × n
H	10 + 1,46 × n

Data sheet

Plate heat exchanger

XGF100 -034, -035, -050, -066

Description



Danfoss XGF plate heat exchanger has been developed specifically for District Energy applications like District Heating and Cooling ensuring you a reliable high efficient plate heat exchanger fulfilling your needs.

Among others the XGF range include following features:

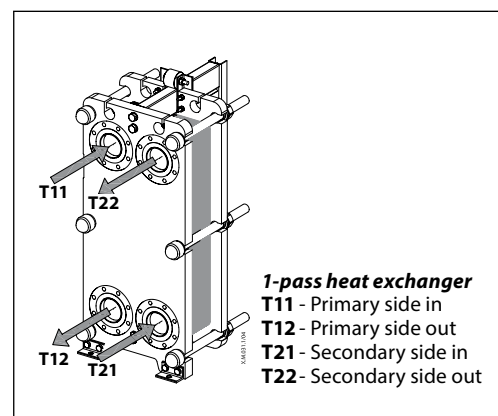
- Improved plate alignment system;
- Glue free gaskets with a robust attachment system;
- Enforced distribution area;
- Optimized distribution area ensures high efficiency and reduced risk of fouling.

Design and function

The heat exchangers are made of shape-pressed heat plates between which the flow channels are created. Gaskets between the plates separate the flow channels from each other so that the flows do not mix. The heavy turbulence and counter-flow principle enables efficient heat transfer. The task of the heat exchanger is to transfer heat from the primary to secondary flow through a heat transfer plate thus preventing the flows from mixing with each other. The plate heat exchanger with gaskets can be opened for cleaning and for replacement of plates and gaskets. The heat output can be changed by adding or removing plates.

The choice of heat exchanger is determined by the desired heat output, required temperatures and the permitted pressure losses.

The XGF100 gasketed hex range include 4 plate types in different length and same width. All plates are available in L and H type which can be combined to M type. This datasheet include a range of types, where standard code no's have been prepared, all in PN 16 variants in 1 pass. Standard codes have not been created for XGF100-066.



The complete range can be supplied in PN 25 and 2 pass variants. All variants can be calculated in Danfoss Calculation software "Hexact", where they will be shown without a standard code no. Unique code no's for these variants will be created when they are ordered. Please contact your local Danfoss Sales Office for offering and ordering.

Ordering

1-pass gasketed heat exchangers type XGF100

Picture	No. of plates (n)	100-034H	100-034M	100-034L	100-035H	100-035M	100-035L	100-050H
		Code No.						
	50	004H7001	004H7012	004H7023	004H7034	004H7045	004H7056	004H7067
	60	004H7002	004H7013	004H7024	004H7035	004H7046	004H7057	004H7068
	70	004H7003	004H7014	004H7025	004H7036	004H7047	004H7058	004H7069
	80	004H7004	004H7015	004H7026	004H7037	004H7048	004H7059	004H7070
	90	004H7005	004H7016	004H7027	004H7038	004H7049	004H7060	004H7071
	100	004H7006	004H7017	004H7028	004H7039	004H7050	004H7061	004H7072
	110	004H7007	004H7018	004H7029	004H7040	004H7051	004H7062	004H7073
	120	004H7008	004H7019	004H7030	004H7041	004H7052	004H7063	004H7074
	130	004H7009	004H7020	004H7031	004H7042	004H7053	004H7064	004H7075
	140	004H7010	004H7021	004H7032	004H7043	004H7054	004H7065	004H7076
	150	004H7011	004H7022	004H7033	004H7044	004H7055	004H7066	004H7077

Accessories - Insulations

Type coverage (plate nos)	No. of plates	Code No.
Insulation set	XGF100-034 20->54	004H7105
	XGF100-035 20->34	
	XGF100-034 56->144	004H7106
	XGF100-035 36->92	
	XGF100-034 146->266	004H7107
	XGF100-035 94->168	

Type coverage (plate nos)	No. of plates	Code No.
Insulation set XGF100-050	20->54	004H7111
	56->144	004H7112
	146->266	004H7113
Insulation set XGF100-066	20->54	004H7114
	56->144	004H7115
	146->266	004H7116

Accessories - EPDM Gasket, sets of 10 & 250 (Pricelist is per 1 pc.)

Type	Code No.
Gasket for XGF100-034, I-pack 10 pcs	004H7120
Gasket for XGF100-034, I-pack 250 pcs	004H7121
Gasket for XGF100-035, I-pack 10 pcs	004H7122
Gasket for XGF100-035, I-pack 250 pcs	004H7123

Type	Code No.
Gasket for XGF100-050H, I-pack 10 pcs	004H7124
Gasket for XGF100-050H, I-pack 250 pcs	004H7125
Gasket for XGF100-066H, I-pack 10 pcs	004H7126
Gasket for XGF100-066H, I-pack 250 pcs	004H7127

Accessories - Plates for XG100 PN16, sets of 10 & 250 (Material 1.4404) (Pricelist is per 1 pc.)

Type coverage (plate nos)	Code No.
Plates for XGF100-034H PN16, I-pack 10 pcs	004H7130
Plates for XGF100-034L PN16, I-pack 10 pcs	004H7131
Plates for XGF100-034H PN16, I-pack 250 pcs	004H7132
Plates for XGF100-034L PN16, I-pack 250 pcs	004H7133
Plates for XGF100-035H PN16, I-pack 10 pcs	004H7134
Plates for XGF100-035L PN16, I-pack 10 pcs	004H7135
Plates for XGF100-035H PN16, I-pack 250 pcs	004H7136
Plates for XGF100-035L PN16, I-pack 250 pcs	004H7137

Type coverage (plate nos)	Code No.
Plates for XGF100-050H PN16, I-pack 10 pcs	004H7138
Plates for XGF100-050L PN16, I-pack 10 pcs	004H7139
Plates for XGF100-050H PN16, I-pack 250 pcs	004H7140
Plates for XGF100-050L PN16, I-pack 250 pcs	004H7141
Plates for XGF100-066H PN16, I-pack 10 pcs	004H7134
Plates for XGF100-066L PN16, I-pack 10 pcs	004H7135
Plates for XGF100-066H PN16, I-pack 250 pcs	004H7136
Plates for XGF100-066L PN16, I-pack 250 pcs	004H7137

Accessories - PN16, sets of 1 front and 1 back plate for 1 pass versions incl EPDM gaskets

Type	Code No.
XGF100-034H: spec. plates 1-pass versions, including gaskets. PN16	004H7146
XGF100-034L: spec. plates 1-pass versions, including gaskets. PN16	004H7148
XGF100-035H: spec. plates 1-pass versions, including gaskets. PN16	004H7149
XGF100-035L: spec. plates 1-pass versions, including gaskets. PN16	004H7151

Type	Code No.
XGF100-050H: spec. plates 1-pass versions, including gaskets. PN16	004H7152
XGF100-050L: spec. plates 1-pass versions, including gaskets. PN16	004H7154
XGF100-066H: spec. plates 1-pass versions, including gaskets. PN16	004H7155
XGF100-066L: spec. plates 1-pass versions, including gaskets. PN16	004H7157

Accessories - PN16, sets of 1 front, 1 back and 1 middle plates for 2 pass versions incl EPDM gaskets

Type	Code No.
XGF100-034H: spec. plates 2-pass version, including gaskets PN16	004H7158

Type	Code No.
XGF100-050H: spec. plates 2-pass version, including gaskets PN16	004H7164

Ordering (*continuous*)

Accessories - **Plates for XG100 PN25**, sets of 10 & 250 (Material 1.4404) (Pricelist is per 1 pc.)

Type coverage (plate nos)	Code No.	Type coverage (plate nos)	Code No.
Plates for XGF100-034H PN25, I-pack 10 pcs	004H7170	Plates for XGF100-050H PN25, I-pack 10 pcs	004H7178
Plates for XGF100-034L PN25, I-pack 10 pcs	004H7171	Plates for XGF100-050L PN25, I-pack 10 pcs	004H7179
Plates for XGF100-034H PN25, I-pack 250 pcs	004H7172	Plates for XGF100-050H PN25, I-pack 250 pcs	004H7180
Plates for XGF100-034L PN25, I-pack 250 pcs	004H7173	Plates for XGF100-050L PN25, I-pack 250 pcs	004H7181
Plates for XGF100-035H PN25, I-pack 10 pcs	004H7174	Plates for XGF100-066H PN25, I-pack 10 pcs	004H7182
Plates for XGF100-035L PN25, I-pack 10 pcs	004H7175	Plates for XGF100-066L PN25, I-pack 10 pcs	004H7183
Plates for XGF100-035H PN25, I-pack 250 pcs	004H7176	Plates for XGF100-066H PN25, I-pack 250 pcs	004H7184
Plates for XGF100-035L PN25, I-pack 250 pcs	004H7177	Plates for XGF100-066L PN25, I-pack 250 pcs	004H7185

Accessories - **PN25**, sets of 1 front and 1 back plate for 1 pass versions incl EPDM gaskets

Type	Code No.	Type	Code No.
XGF100-034H: spec. plates 1-pass versions, including gaskets. PN25	004H7192	XGF100-050H: spec. plates 1-pass versions, including gaskets. PN25	004H7198
XGF100-034L: spec. plates 1-pass versions, including gaskets. PN25	004H7194	XGF100-050L: spec. plates 1-pass versions, including gaskets. PN25	004H7200
XGF100-035H: spec. plates 1-pass versions, including gaskets. PN25	004H7195	XGF100-066H: spec. plates 1-pass versions, including gaskets. PN25	004H7201
XGF100-035L: spec. plates 1-pass versions, including gaskets. PN25	004H7197	XGF100-066L: spec. plates 1-pass versions, including gaskets. PN25	004H7203

Accessories - **PN25**, sets of 1 front, 1 back and 1 middle plates for 2 pass versions incl EPDM gaskets

Type	Code No.	Type	Code No.
XGF100-034H: spec. plates 2-pass version, including gaskets PN25	004H7207	XGF100-050H: spec. plates 2-pass version, including gaskets PN25	004H7213

Data sheet

Plate heat exchanger XGF100

Technical data

Type		XGF100-34	XGF100-35	XGF100-50	XGF100-66
Max. working pressure PN	bar	16			
Max. operating temperature	°C	150			
Min. operating temperature		−10			
Flow medium		Circulation water/glycolic water up to 50 %			
Heat transfer area per plate, HTA	m²	0,306	0,306	0,467	0,628
Max. no of plates		500			250
Volume/channel	ltr	0,3	0,7	0,7	1,5
Primary side volume		(n/2) -1 × volume/channel			
Secondary side volume		(n/2) × volume/channel			
Connection type		Studded for flanges according to EN1092, directly on endplates			
Connection size		DN 100			
Plate thickness	mm	0,5 for PN16			
Materials					
Plate		Stainless steel EN1.4401			
Liners in connections		Stainless steel EN1.4401			
Gasket type		Glue free			
Gasket material		EPDM			

Insulation properties

Type			Aluminium stucco and mineral wool
Heat conductivity, λ		W/mK	0,042
Max temperature	Permanent	°C	150
	Short term peak		180
Wall thickness		mm	65

Note:

For more details about insulation please contact your Danfoss sales representative.

Sizing

Dimensioning and selection of heat exchangers should be carried out in the Danfoss calculation software "Hexact". The software can be downloaded from hexact.danfoss.com.

Mounting

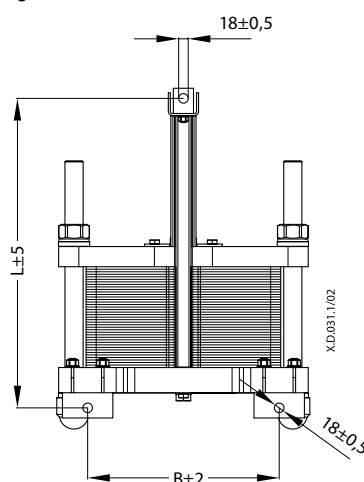
The heat exchanger must be mounted in vertical position. Prepare the foundation for the heat exchanger if necessary, always according to local regulations. It is recommended that all pipes connected to the heat exchanger are equipped with shut-off valves for maintenance purposes.

The pipes to be connected must be mounted so that the strain caused by the thermal expansion, for instance, does not harm the heat exchanger. The pipes must be equipped with brackets to prevent any torsional stress concentration at the heat exchanger's pipe connections. It is recommended that the heat exchanger is equipped with insulation.

A safety valve must be installed between the heat exchanger and the shut-off valves on the secondary side of the heat exchanger. If the safety valve is not installed, thermal expansion of fluid might destroy the heat exchanger when the shut-off valves are closed.

All XGF100 are supplied with brackets for mounting.

PN 16 mounting, dimensions and weight



XGF100-34

Plate range	L	B	Weight (kg)
	mm		
10-54	614	380	363 + 1,278 × n
56-144	914		377 + 1,278 × n
146-266	1314		395 + 1,278 × n
268-356	1614		415 + 1,278 × n
358-508	2114		436 + 1,278 × n

XGF100-35

Plate range	L	B	Weight (kg)
	mm		
10-34	614	380	363 + 1,337 × n
36-92	914		377 + 1,337 × n
94-168	1314		395 + 1,337 × n
170-226	1614		415 + 1,337 × n
226-322	2114		436 + 1,337 × n

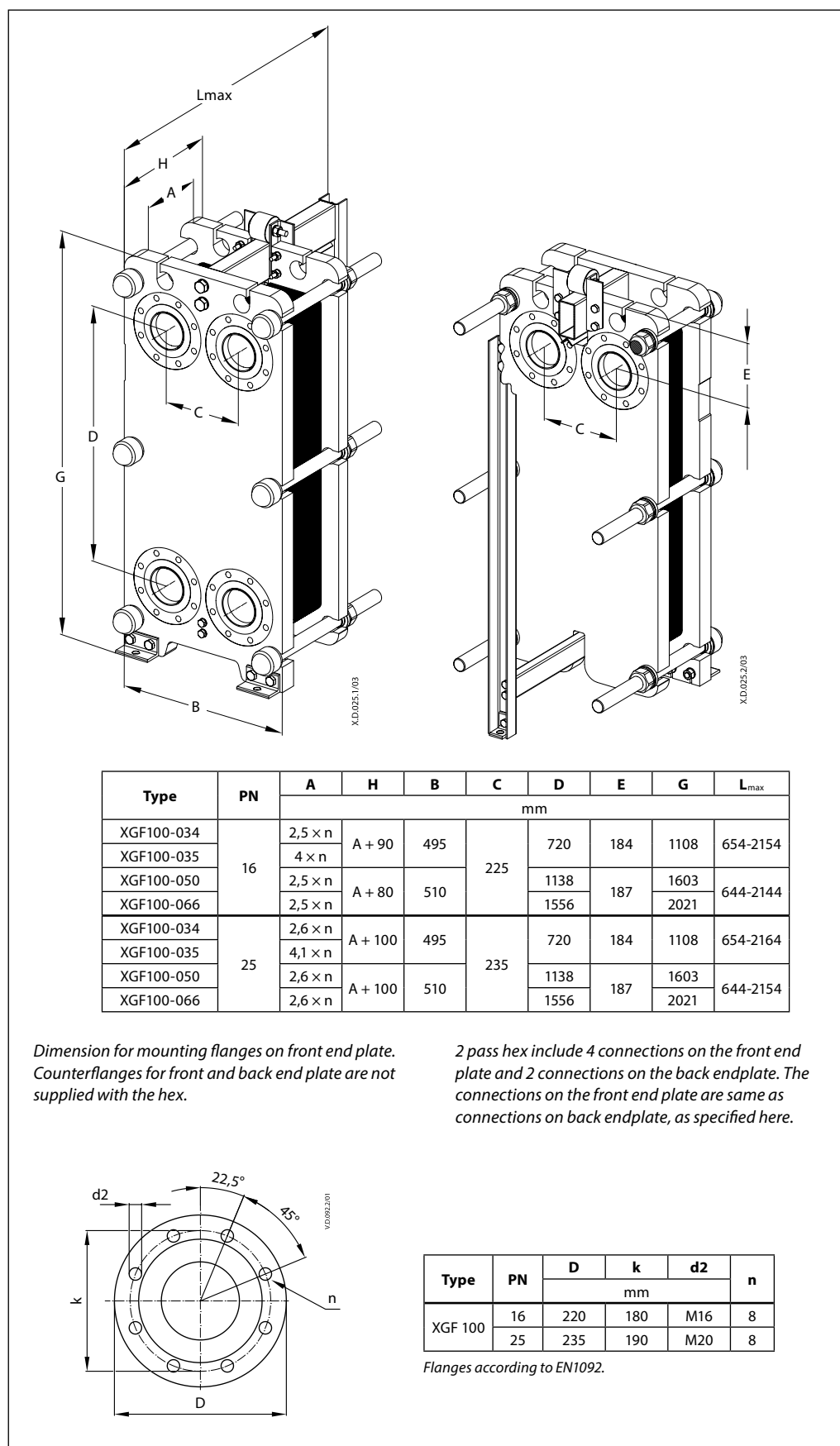
XGF100-50

Plate range	L	B	Weight (kg)
	mm		
10-54	604	395	493 + 1,915 × n
56-144	904		504 + 1,915 × n
146-266	1304		523 + 1,915 × n
268-356	1604		544 + 1,915 × n
358-508	2104		566 + 1,915 × n

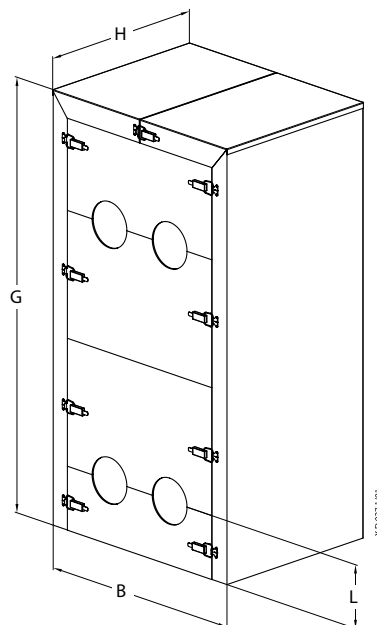
XGF100-66

Plate range	L	B	Weight (kg)
	mm		
10-54	604	395	634 + 2,572 × n
56-144	904		650 + 2,572 × n
146-266	1304		660 + 2,572 × n
268-356	1604		673 + 2,572 × n
358-508	2104		687 + 2,572 × n

Dimensions



Dimensions (continuous)



Insulation

Type	PN	max NOP	Isolation code	G	B	H	Weight
				mm			(kg)
XGF100-034	16 and 25	54	004H7105	1225	634	490	25
		144	004H7106			720	29
		266	004H7107			1020	38
		356	004H7900			1240	44
		508	004H7901			1640	52
XGF100-035		34	004H7105	1225	634	490	25
		92	004H7106			720	29
		168	004H7107			1020	38
		226	004H7900			1240	44
		322	004H7901			1640	52
XGF100-050	16	54	004H7111	1670	650	480	40
		144	004H7112			720	55
		266	004H7113			1040	75
		356	004H7902			1280	90
		508	004H7903			1680	100
	25	54	004H7906			480	40
		144	004H7907			720	55
		266	004H7908			1040	75
		356	004H7909			1280	90
		508	004H7910			1680	100
XGF100-066	16	54	004H7114	2080	650	480	55
		144	004H7115			680	70
		266	004H7116			1000	95
		356	004H7904			1200	115
		508	004H7905			1600	145
	25	54	004H7911			480	55
		144	004H7912			680	70
		266	004H7913			1000	95
		356	004H7914			1200	115
		508	004H7915			1600	145

Data sheet

Micro plate heat exchanger (MPHE): XGM032

Description



Micro Plate Heat Exchangers - a revolutionary technology from Danfoss. Characterized by their unique plate pattern, MPHEs enable heat to be transferred more efficient than any previous model of heat exchangers.

Benefits:

- Energy and cost savings
- Better heat transfer
- Lower pressure loss
- More flexible design
- Longer life time

more on:

MPHE.danfoss.com

XGM032 is gasketed plate heat exchanger, designed and configured for District Heating and other Heating applications.

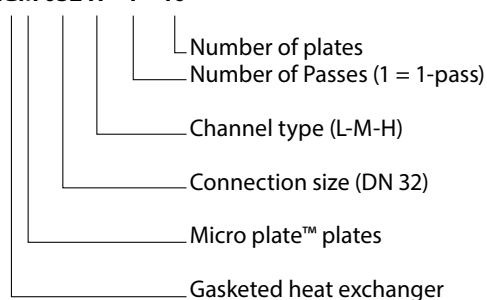
Heat exchanger XGM032 will be available in plate corrugation H, M and L. It will be available in 1-pass version (with 4 connections) and 2-pass version (with 6 connections). Heat exchanger can be dimensioned in Danfoss calculation software "Hexact" which can be downloaded from hexact.danfoss.com.

Approvals:

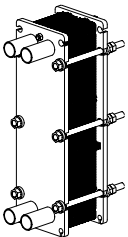
- Pressure Equipment Directive (PED) 97/23/EC
- GOST/Russia

Ordering

XGM 032 H – 1 – 10



1-pass gasketed heat exchangers type XGM032 (PN 16)

Picture	No. of plates (n)	Connection	XGM032L	XGM032M	XGM032H
			Code No.		
	20	Thread G 1¼	004H7096	004H7087	004H7078
	30		004H7097	004H7088	004H7079
	40		004H7098	004H7089	004H7080
	50		004H7099	004H7090	004H7081
	60		004H7100	004H7091	004H7082
	70		004H7101	004H7092	004H7083
	80		004H7102	004H7093	004H7084
	90		004H7103	004H7094	004H7085
	100		004H7104	004H7095	004H7086

Note: Brackets has to be ordered separately.

Data sheet

Micro Plate Heat Exchanger (MPHE) XGM032

Ordering - continuous

Accessories - Insulations

Type coverage (plate nos)	Code No.
20-40	004H7117
41-70	004H7118
71-100	004H7119

Accessories - Bracket

Type	Code No.
Brackets	004H7222

Accessories - EPDM Gasket

Type	Code No.
Gasket for XGM032, I-pack 10 pcs	004H7128
Gasket for XGM032, I-pack 250 pcs	004H7129

Accessories for gasketed heat exchanger type XGM

Type	Code No.
Plates for XGM032H PN 16/25, I-pack 10 pcs	004H7186
Plates for XGM032M PN 16/25, I-pack 10 pcs	004H7187
Plates for XGM032L PN 16/25, I-pack 10 pcs	004H7188
Plates for XGM032H PN 16/25, I-pack 250 pcs	004H7189
Plates for XGM032M PN 16/25, I-pack 250 pcs	004H7190
Plates for XGM032L PN 16/25, I-pack 250 pcs	004H7191
XGM032H: spec. plates 1-pass versions, including gaskets. PN 16/25	004H7204
XGM032M: spec. plates 1-pass versions, including gaskets. PN 16/25	004H7205
XGM032L: spec. plates 1-pass versions, including gaskets. PN 16/25	004H7206
XGM032H: spec. plates 2-pass version, including gaskets PN 16/25	004H7219
XGM032M: spec. plates 2-pass version, including gaskets PN 16/25	004H7220
XGM032L: spec. plates 2-pass version, including gaskets PN 16/25	004H7221

Tailpieces for gasketed heat exchanger type XG

Picture	Description	Connection	Code No. ¹⁾
	Solder tailpieces	G 1¼ A/22 mm, 28 mm	004B1358
	Weld-on tailpieces	G 1¼ A/DN 25	003H6910
		G 1¼ A/DN 32	004B1343

¹⁾ One set contains 2 tailpieces with union nuts and gaskets

Technical data

Max. working pressure	PN (bar)	16 & 25
Max. operating temperature	°C	150
Min. operating temperature ¹⁾		-10
Flow medium	Circulation water / glycolic water up to 50 %	
Volume / Channel	Ltr	0,097
Primary side volume:		(n/2) -1 x volume/channel
Secondary side volume:		(n/2) x volume/channel
Connection type	Cylindrical external thread acc. to DIN ISO 228/1	
Connection size	G 1¼	
Plate material	Stainless steel, mat. no. EN 1.4404	
Plate thickness	mm	0,3
Gasket type	Glue free	
Gasket material, rubber	EPDM	

¹⁾ At flow temp. below 2 °C glycolic water must be used

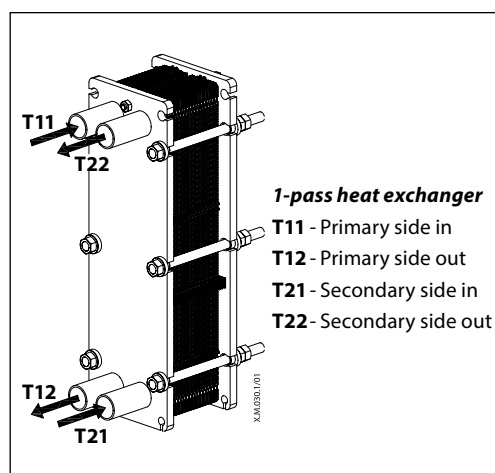
Insulation properties

Type	Aluminium stucco and mineral wool		
Heat conductivity, λ	W/mK	0,042	
Max temperature	Permanent	°C	150
	Short term peak		180
Wall thickness	mm	40	

Note:

For more details about insulation please contact your Danfoss sales representative.

Design and function



The heat exchangers are made of shape-pressed heat plates between which the flow channels are created. Gaskets between the plates separate the flow channels from each other so that the flows do not mix. The heavy turbulence and counter-flow principle enables efficient heat transfer. The task of the heat exchanger is to transfer heat from the primary to secondary flow through a heat transfer plate thus preventing the flows from mixing with each other. The plate heat exchanger with gaskets can be opened for cleaning and for replacement of plates and gaskets. A steeples output adjustment can be carried out by changing the number of plates.

The choice of heat exchanger is determined by the desired heat output, required temperatures and the permitted pressure losses.

Sizing

XGM032 will be available as standard and tailor made unit. It can be calculated in latest version of Danfoss calculation software "Hexact" ver. 2.1.3 which can be downloaded from hexact.danfoss.com.

Mounting

The heat exchanger must be mounted in vertical position. Prepare the foundation for the heat exchanger if necessary, always according to local regulations. It is recommended that all pipes connected to the heat exchanger are equipped with shut-off valves for maintenance purposes.

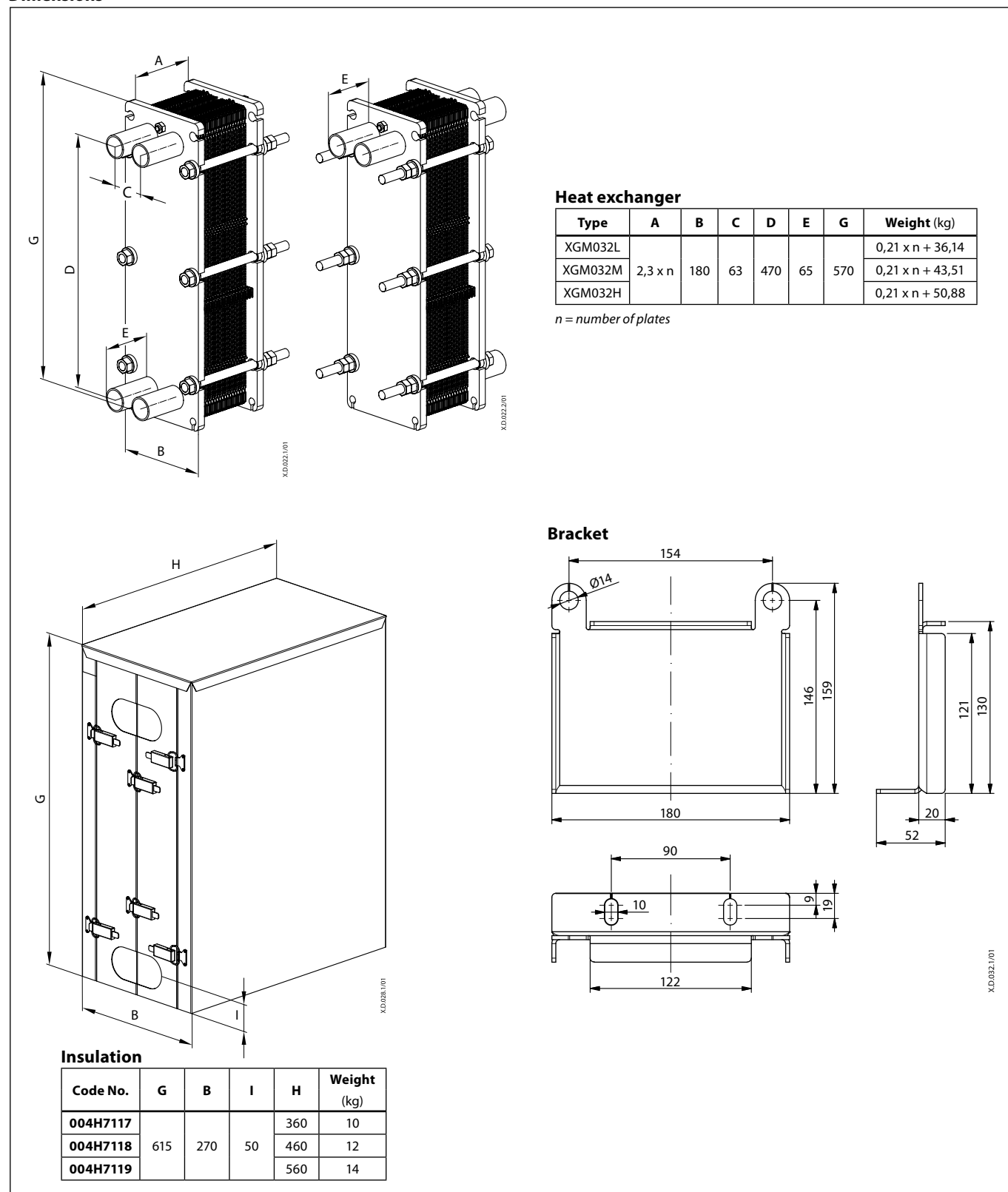
The pipes to be connected must be mounted so that the strain caused by the thermal expansion, for instance, does not harm the heat exchanger.

The pipes must be equipped with brackets to prevent any torsional stress concentration at the heat exchanger's pipe connections.

It is recommended that the heat exchanger is equipped with insulation.

A safety valve must be installed between the heat exchanger and the shut-off valves on the secondary side of the heat exchanger. If the safety valve is not installed, thermal expansion of fluid might destroy the heat exchanger when the shut-off valves are closed.

Dimensions¹⁾



¹⁾ Dimensions for 2-pass and PN25 version can be extract from calculating software "Hexact" in tab "Dimensional data".

Data sheet

Micro plate heat exchanger (MPHE): XB12

Description



Micro Plate Heat Exchangers - a revolutionary technology from Danfoss. Characterized by their unique plate pattern, MPHEs enable heat to be transferred more efficient than any previous model of heat exchangers.

Benefits:

- Energy and cost savings
- Better heat transfer
- Lower pressure loss
- More flexible design
- Longer life time

more on:
districtenergy.danfoss.com (MPHE)

XB 12 is copper brazed heat exchanger, designed and configured for District Heating, District Cooling and other Heating applications. Heat exchanger XB12 will be available in plate corrugation H, M and L. It will be available in 1-pass (with 4 connections) and 2-pass version (with 6 connections). Heat exchangers can be dimensioned in Danfoss calculation software "Hexact" which can be downloaded from hexact.danfoss.com.

Approval:

Pressure Equipment Directive (PED) 97/23/EC.

Ordering

1-pass heat exchanger **XB12** with G 1 1/4" connection size ¹⁾

Picture	No. of plates, n	Connection	XB 12H-1	XB 12M-1	XB 12L-1
			Code No.		
	10	Thread G1 1/4" A	004H7555	004H7540	004H7525
	16		004H7556	004H7541	004H7526
	20		004H7557	004H7542	004H7527
	26		004H7558	004H7543	004H7528
	30		004H7559	004H7544	004H7529
	36		004H7560	004H7545	004H7530
	40		004H7561	004H7546	004H7531
	50		004H7562	004H7547	004H7532
	60		004H7563	004H7548	004H7533
	70		004H7564	004H7549	004H7534
	80		004H7565	004H7550	004H7535
	90		004H7566	004H7551	004H7536
	100		004H7567	004H7552	004H7537
	110		004H7568	004H7553	004H7538
	120		004H7569	-	-
	140		004H7570	-	-

¹⁾ Available also with 1 inch connection size. Please contact your Danfoss representative.

2-pass heat exchanger **XB12** with G 1 1/4" connection size ¹⁾

Picture	No. of plates ²⁾ , n	Connection	XB 12H-1	XB 12M-1	XB 12L-1
			Code No.		
	20/20	Thread G1 1/4" A	004H7596	004H7584	004H7572
	26/26		004H7597	004H7585	004H7573
	30/30		004H7598	004H7586	004H7574
	36/36		004H7599	004H7587	004H7575
	40/40		004H7600	004H7588	004H7576
	46/46		004H7601	004H7589	004H7577
	50/50		004H7602	004H7590	004H7578
	56/56		004H7603	004H7591	004H7579
	60/60		004H7604	004H7592	004H7580
	66/66		004H7605	004H7593	004H7581
	70/70		004H7606	004H7594	004H7582

¹⁾ Available also with 1 inch connection size. Please contact your Danfoss representative.

²⁾ first pass/second pass

Ordering (continued)

Accessories:

Insulation for 1-pass
EPP (Expanded Polypropylene) insulation

No. of plates	Type coverage (plate number)		
	H	M	L
10	004H4201	004H4201	004H4201
16			
20			
26			
30			
36			
40	004H4202	004H4202	004H4202
50			
60			
70			
80	004H4203	004H4203	004H4203
90			
100			
110			
120	1)	-	-
140		-	-

¹⁾ EPP insulation is not available please order PU insulation for this size.

PU (Polyurethane) insulation

No. of plates	Type coverage (plate number)		
	H	M	L
10	004H4210	004H4210	004H4210
16			
20			
26			
30			
36			
40	004H4211	004H4211	004H4211
50			
60			
70			
80	004H4212	004H4212	004H4212
90			
100			
110			
120	004H4213	-	-
140		-	-

Accessories:

Insulation for 2-pass
EPP (Expanded Polypropylene) insulation

No. of plates	Type coverage (plate number)		
	H	M	L
20/20	004H4201	004H4201	004H4202
26/26	004H4202	004H4202	
30/30			
36/36			
40/40	004H4203	004H4203	004H4203
46/46			
50/50			
56/56			
60/60	1)	1)	1)
66/66			
70/70			

¹⁾ EPP insulation is not available please order PU insulation for this size.

PU (Polyurethane) insulation

No. of plates	Type coverage (plate number)		
	H	M	L
20/20	004H4210	004H4210	004H4211
26/26			
30/30			
36/36			
40/40	004H4211	004H4211	004H4212
46/46			
50/50			
56/56			
60/60	004H4212	004H4212	004H4213
66/66			
70/70			

Accessories-Tailpieces

0,5 mm	Description	Connection	Code No. ¹⁾
	Solder tailpieces	G 1 1/4" A / 28mm	004B1358
		G 1"A / 22mm	004B2906
		G 1"A / 18mm	004B2905
		G 1"A / 15mm	004B2904
	Weld-on tailpieces	G 1"A / DN20	003H6909
		G 1"A / DN25	004B2903
		G 1 1/4" / DN25	003H6910
		G 1 1/4" / DN32	004B1343
	Threaded tailpieces	G 1 1/4" / G 1"	004H4205
		G 1 1/4" / G 1 1/2"	004H4206
		G 1" / G 3/4"	004B2913

¹⁾ One set contains 2 tailpieces with union nuts and gaskets

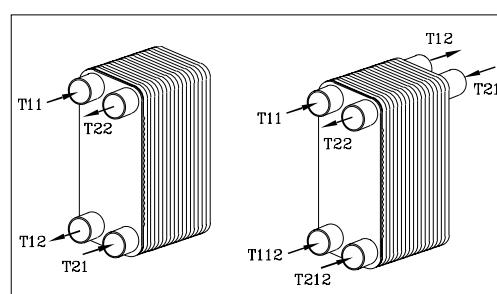
Accessories-Bracket¹⁾

Picture	Code No.
	004H4200

¹⁾ Bracket set consist of bracket and 2 seeger rings

Design and function

- T11** - Primary side in
- T12** - Primary side out
- T112** - Primary side second inlet (2-pass)
- T21** - Secondary side in
- T22** - Secondary side out
- T212** - Secondary side second inlet (2- pass)



Danfoss 2 pass heat exchangers are made with 6 connections, as they are primarily used to heat tap water.

There is one additional connection to allow circulation of hot water and one connection to connect and extract heat from return water from heating heat exchanger. Connections T112 and T212 can be blocked if they are not used.

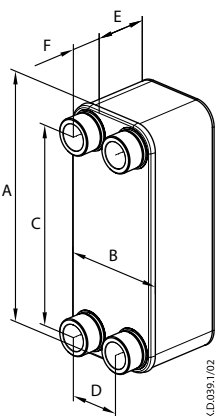
Technical data

Type		XB 12L-1	XB 12M-1	XB 12H-1
Max. working pressure	bar	25		
Min. / Max. temperature	°C	-10 / 180		
Flow medium		DH: Circulation water / glycolic water up to 50% DC: ethylene-, propylene-glycolic water, ethanol-water solutions and other suitable heat transfer media. (Please contact your Danfoss representative).		
Volume/channel	Ltr	0,042	0,032	0,027
Connection type		Cylindrical external thread acc. to DIN ISO 228/1		
Connection size		G 1 ¼" or G 1"		
Weight	kg	1-pass: G 1 ¼" / G 1" connection: 1,53+0,076*n / 1,36+0,076*n		
		2-pass: G 1 ¼" / G 1" connection: 1,77+0,076*n / 1,52+0,076*n		
Materials				
Plate		Stainless steel, EN 1.4404 (AISI 316L)		
Brazing		Copper		

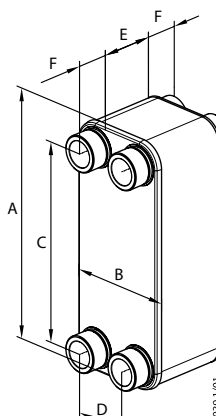
Insulation

Type		PU (Polyurethane)	EPP (Expanded Polypropylene)
Heatconductivity, λ	W/mK	0,035	0,038
Max temperature	Permanent	130	110
	Short term peak	160	
Wall thickness	mm	20	30

Dimensions ¹⁾



X.D.039.1/02

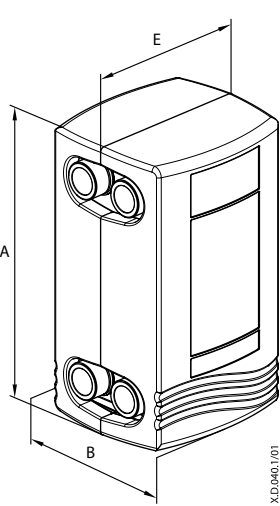


X.D.039.1/01

Type	Connection	
	G 1 ¼" ¹⁾	G 1" ¹⁾
A	289	
B	118	
C	234	235
D	63	65
F	25	20

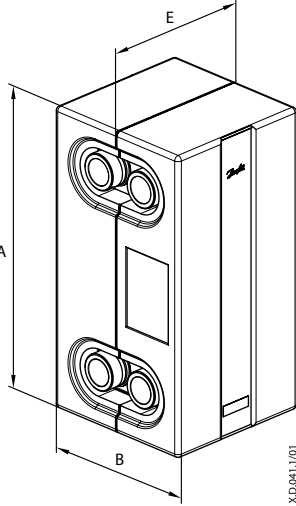
Type	E (mm)
XB 12L	n × 1,75 + 10 (+0,5/-3%)
XB 12M	n × 1,40 + 10 (+0,5/-3%)
XB 12H	n × 1,2 + 10 (+0,5/-3%)

n = number of plates
¹⁾ Cylindrical external thread acc. to DIN ISO 228/1



X.D.040.1/01

PU - insulation



X.D.041.1/01

EPP - insulation

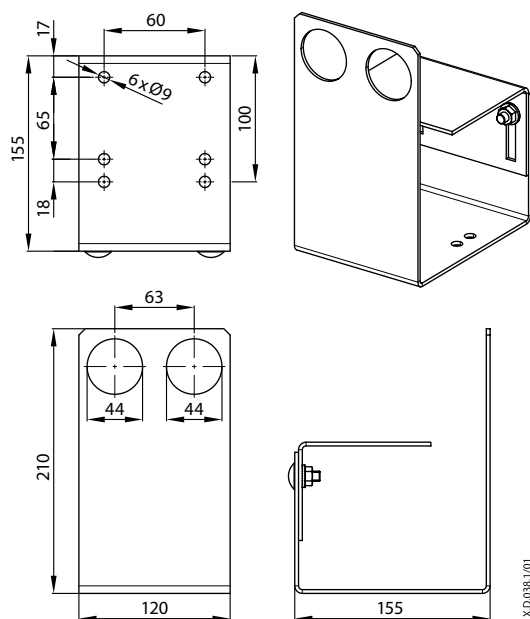
Insulation

Type	mm			Code No.
	A	B	E	
EPP	352	185	130	004H4201
			180	004H4202
			235	004H4203
PU	336	185	176	004H4210
			184	004H4211
			185	004H4212
			188	004H4213
			200	004H4214

¹⁾ Dimensions can be as well extract from Danfoss calculation software "Hexact" which can be downloaded from hexact.danfoss.com.

Dimensions (continuous)

Mounting bracket



Tailpieces

Picture	Description	Connection	Code No.	a	b	SW ¹⁾
				mm		
	Solder tailpieces	G 1 ¼" A / 28mm	004B1358	25,4 / 28	33	46
		G 1" A / 22mm	004B2906	25,6	35	37
		G 1" A / 18mm	004B2905	20	35	37
		G 1" A / 15mm	004B2904	20	35	37
	Weld-on tailpieces	G 1" A / DN20	003H6909	26	49,5	41
		G 1" A / DN25	004B2903	33,5	40	37
		G 1 ¼" / DN25	003H6910	33	49,5	50
		G 1 ¼" / DN32	004B1343	39,5	45	46
	Threaded tailpieces	G 1 ¼" / G 1"	004H4205	1"	40	46
		G 1 ¼" / G 1 ½"	004H4206	1 ½"	60	46
		G 1" / G ¾"	004B2913	¾"	35	37

¹⁾ Union nut, width across flats

Data sheet

Brazed heat exchanger XB

Description



The XB is a range of copper brazed plate heat exchangers for use in District Heating (DH) and District Cooling (DC) applications, e.g. domestic hot water production, district heating substation to separate the network from house installation or as pressure breakers. The range consist of numerous individual plate sizes of which several can be delivered with different corrugation depth or pattern, thus ensuring that the optimal heat exchanger can be selected for all applications.

Approvals:

- CE certificate according (PED) 97/23/EC
- GOST/Russia
- SVGW/Switzerland
- VA/Denmark

Main data:

- Min. temperature -10°C
Max. temperature $+180^{\circ}\text{C}$
- Max. working pressure 25 bar
- Flow media
DH: Circulation water / glycolic water up to 50 %
DC: ethylene-, propylene-glycolic water, ethanol-water solutions and other suitable heat transfer media. (Please contact your Danfoss representative).
- Connection size DN (threaded or flanged) 20-100

Ordering

Explanation, XB type

XB 10L – 1 – 10 — Number of plates

Pass of the heat exchanger
1 = 1-pass
2 = 2-pass

Plate type

Plate size

B = Brazed heat exchanger

The heat exchanger can consist of plates type L or plates type H.

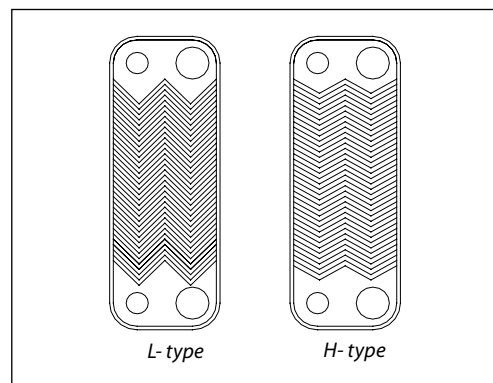
The H- type plate has larger herring bone angle than the L- type plate. H- type plate fits better for certain temperatures than L- type. H- type heat exchangers have better heating capacity, but they also have higher pressure loss.

The plate set can also be a combination of these two types. If every other plate is H-type plate and every other plate is L-type plate, the combination is called type M.

Plate types

Several of the heat exchangers can be delivered in three different basic corrugations: H M L making them optimal for different applications. Please see the characteristics below.

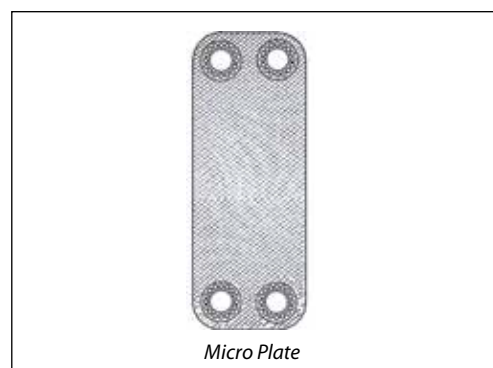
	H- types	M- type	L- type
Channel	Small	Medium Mix of H/L	Large
Angle if chevron pattern	Obtuse		Acute
Heat transfer	Relatively high	Medium	Relatively low
Pressure drop	Relatively high	Medium	Relatively low



Micro Plate Heat Exchanger (MPHE) principle:

Traditionally the different versions have been created by using different angles in the chevron pattern of the heat exchanger plates.

However new and more efficient heat transfer patterns have been developed. Characteristic for the pattern is that the corrugation consists of dimples in different size and shape, creating Micro Plate heat exchangers. Micro Plate heat exchangers offers same heat transfer with lower weight, size and pressure drop. Besides better heat transfer Micro Plate heat exchangers offers higher mechanical strength.



1-pass brazed heat exchangers type XB

Type	XB04-1	XB10-1	XB20-1	XB24-1	XB 30-1
Connection	Thread G ¾ A	Thread G 1 A	Thread G 1 A	Thread G ¾ A	Thread G 1 A
No of plates, n	Code No.				
8	004B1011	004B1004	-	-	-
10	004B1012	004B1005	004B1205	004B1027	004B1405
16	004B1014	004B1008	004B1208	004B1028	004B1408
20	004B1016	004B1010	004B1210	004B1029	004B1410
26	004B1017	004B1013	004B1213	004B1031	004B1413
30	004B1019	004B1015	004B1215	004B1032	004B1415
36	004B1021	004B1018	004B1218	004B1033	004B1418
40	004B1023	004B1020	004B1220	004B1034	004B1420
50	004B1024	004B1025	004B1225	004B1067	004B1425
60	004B1026	004B1030	004B1230	004B1068	004B1430
70	-	004B1035	004B1235	004B1069	004B1435
80	-	-	-	-	004B1440
90	-	-	-	-	004B1445
100	-	-	-	-	004B1450
110	-	-	-	-	-
120	-	-	-	-	-

Ordering (continued)

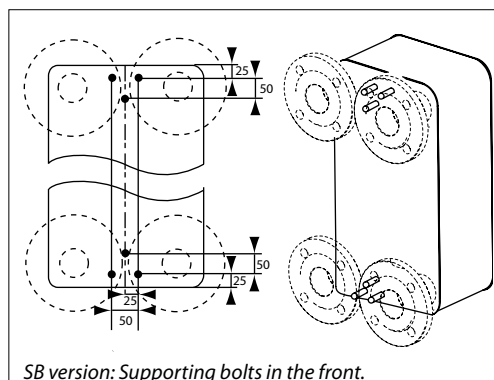
1-pass brazed heat exchangers type XB

Type	XB51H-1	XB51L-1	*XB51H-1 SB	*XB51H-1 SB	*XB51L-1 SB	*XB51L-1 SB	XB70L-1 ²⁾	XB70M-1 ²⁾	XB70H-1 ²⁾
Connection	Thread G2A	Thread G 2 A	Thread G 2 A	Flange DN 50	Thread G 2 A	Flange DN 50	Flange DN 65/100 ¹⁾	Flange DN 65/100 ¹⁾	Flange DN 65/100 ¹⁾
No of plates, n	Code No.								
10	004B1153	004B1141	-	-	-	-	-	-	-
16	004B1154	004B1142	-	-	-	-	-	-	-
20	004B1432	004B1532	-	-	-	-	-	-	-
26	004B1433	004B1533	-	-	-	-	-	-	-
30	004B1815	004B1194	004B1103	-	004B1345	-	-	-	-
36	004B1818	004B1195	004B1104	-	004B1346	-	-	-	-
40	004B1820	004B1196	004B1105	-	004B1347	-	-	-	-
50	004B1825	004B1197	004B1106	-	004B1348	-	004B2425	004B2000	004B2012
60	004B1830	004B1198	-	004B1107	-	004B1350	004B2430	004B2001	004B2013
70	004B1835	004B1199	-	004B1108	-	004B1351	004B2435	004B2002	004B2014
80	004B1840	004B1200	-	004B1109	-	004B1352	004B2440	004B2003	004B2015
90	004B1845	004B1201	-	004B1110	-	004B1353	004B2445	004B2004	004B2016
100	004B1850	004B1202	-	004B1111	-	004B1355	004B2450	004B2005	004B2017
110	004B1855	004B1203	-	004B1112	-	004B1356	004B2455	004B2006	004B2018
120	004B1860	004B1204	-	004B1114	-	004B1357	004B2460	004B2007	004B2019
130	004B1434	004B1534	-	-	-	-	-	-	-
140	004B1436	004B1536	-	-	-	-	004B2470	004B2008	004B2020
160	-	-	-	-	-	-	004B2480	004B2009	004B2021
180	-	-	-	-	-	-	004B2490	004B2010	004B2022
200	-	-	-	-	-	-	004B2499	004B2011	004B2023

¹⁾ primary side (PN 25) / secondary side (PN 16)

²⁾ delivered with mounting brackets ex factory

* Special versions; SB: This version includes 6 supporting bolts M12x20



Special versions

Special versions for different mediums, connections/couplings, max. operating pressures, materials and capacities are available on request. Please contact the local sales representative for details

Ordering (continued)

2-pass braze heat exchangers type XB

Type	XB04-2	XB10-2	XB20-2	XB30-2	XB51H-2	XB51L-2
Connection	Thread G ¾ A	Thread G 1 A	Thread G 1 A	Thread G 1 A	Thread G 2 A	Thread G 2 A
No of plates ¹⁾ , n	Code No.					
10/10	-	-	-	-	004B1179	004B1147
16/16	-	-	-	-	004B1180	004B1148
20/20	004B1036	004B3010	004B1412	004B3410	004B1181	004B1149
26/26	004B1037	004B3013	004B1414	004B3413	004B1182	004B1150
30/30	004B1038	004B3015	004B1416	004B3415	004B3615	004B1292
36/36	004B1039	004B3018	004B1417	004B3418	004B3618	004B1293
40/40	004B1040	004B3020	004B3220	004B3420	004B3620	004B1294
46/46	004B1041	004B3023	004B3223	004B3423	004B3623	004B1295
50/50	004B1042	004B3025	004B3225	004B3425	004B3625	004B1296
56/56	004B1043	004B3028	004B3228	-	004B3628	004B1297
60/60	004B1044	004B3030	004B3230	004B1431	004B3630	004B1298
66/66	-	-	-	-	004B3633	004B1299
70/70	-	-	-	-	004B3635	004B1300

¹⁾ afterheating/preheating

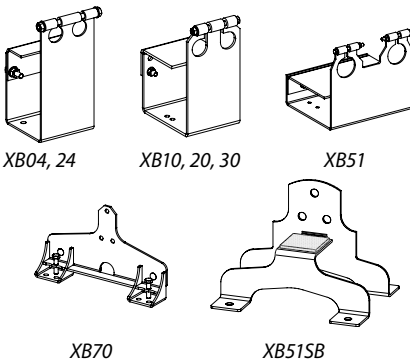
Accessories: Tailpieces

	Description	Suitable for	Connection	Code No. ¹⁾
	Solder tailpieces	XB04, XB24	G ¾ A / 15 mm	004B2945
			G ¾ A / 18 mm	004B2946
		XB10, XB20 XB30	G 1 A / 15 mm	004B2904
			G 1 A / 18 mm	004B2905
			G 1 A / 22 mm	004B2906
		XB51	G 2 A / 28 mm	004B2910
			G 2 A / 35 mm	004B2911
			G 2 A / 42 mm	004B2912
	Weld-on tailpieces	XB04, XB24	G ¾ A / DN 20	004B2944
		XB10, XB20 XB30	G 1 A / DN 15	004B2901
			G 1 A / DN 20	003H6909
			G 1 A / DN 25	004B2903
		XB51	G 2 A / DN 32	004B2907
			G 2 A / DN 40	004B2908
			G 2 A / DN 50	004B2909
	Threaded tailpieces	XB04, XB24	G ¾ A / G ¾ A	004B2947
			G ¾ A / G 1 A	004B2953
		XB10, XB20 XB30	G 1 A / G ¾ A	004B2913

¹⁾ One set contains 2 tailpieces with union nuts and gaskets

Ordering (continued)

Accessories: Mounting brackets for brazed heat exchanger type XB

 <p>XB04, 24 XB10, 20, 30 XB51</p> <p>XB70 XB51SB</p>	Suitable for	Code No.
	XB04, XB24	004B2948
	XB10, XB20, XB30	004B2919
	XB51	004B2923
	XB70	004B2925 ¹⁾
	XB51SB, 30-60 plates	004B1788
	XB51SB, 70-100 plates	004B1789
	XB51SB, 110-160 plates	004B1790

¹⁾ The brackets are delivered with XB70, they will thus be needed only for service or special purposes.

Accessories: Insulation for 1-pass brazed heat exchangers type XB

Type	XB10-1	XB20-1	XB30-1	XB51-1	XB70-1
No of plates					
8	004B1113	-	-	-	-
10		004B1313	004B1513	004B1924	-
16					-
20					-
26					-
30	004B1124	004B1324	004B1524		-
36					-
40					-
50	004B1135	004B1335	004B1535	004B1935	004B2535
60					
70					
80	-	-	004B1550	004B1950	004B2550
90	-	-			
100	-	-			
110	-	-	-	004B1960	004B2570
120	-	-	-		
140	-	-	-	004B3735	
160	-	-	-	-	004B2599
180	-	-	-	-	
200	-	-	-	-	

Ordering (continued)
Accessories: Insulation for 2-pass brazed heat exchangers type XB

Type	XB10-2	XB20-2	XB30-2	XB51-2
No of plates ¹⁾	Code No.			
10/10	-	-	-	-
16/16	-	-	-	-
20/20	004B3115	-	004B3515	-
26/26		-		-
30/30		-		004B3720
36/36	-	004B3520		
40/40	004B3120	004B3325	004B3525	004B3725
46/46	004B3125			
50/50				
56/56	004B3130	004B3330	-	004B3730
60/60			-	
66/66	-	-	-	004B3735
70/70	-	-	-	

¹⁾ afterheating/preheating

Accessories: Insulation properties

Type			PU (Polyurethane) see page 12 for XB51	Coated steel sheet and polyester insulation, see page 12 for XB70
Heat conductivity, λ		W/mK	0,035	0,042
Max temperature	Permanent	°C	130	150
	Short term peak		160	180
Wall thickness		mm	20	30

Data sheet

Brazed heat exchanger XB

Technical data

1-pass brazed heat exchangers type XB

Type	XB04-1	XB10-1	XB20-1	XB24-1	XB30-1	XB51L-1 XB51H-1	XB70L-1 XB70M-1 XB70H-1
Max. working pressure (bar)	25 (16) ¹⁾						25(16) ¹⁾ /16 ³⁾
Min. / Max. temperature ²⁾ (°C)	-10/180						
Flow medium	DH: Circulation water / glycolic water up to 50% DC: ethylene-, propylene-glycolic water, ethanol-water solutions and other suitable heat transfer media. (Please contact your Danfoss representative).						
Volume/channel (litres)	0,060	0,050	0,060	0,100	0,075	0,210	0,55/0,70 ³⁾
Connection type	Cylindrical external thread acc. to DIN ISO 228/1						Flange, DN
Connection size	G ¾ A	G 1 A		G ¾ A	G 1 A	G 2 A	65 ⁴⁾ /100 ⁵⁾ ³⁾
Plate material	Stainless steel, EN 1.4404 (AISI 316L)						
Brazing material	Copper						

¹⁾ 16 bar versions are available on enquiry (all types except XB 04-1, 24-1). XB 70-1 secondary side: max. working pressure 16 bar

²⁾ At flow temperatures below 2 °C glycolic water must be used

³⁾ Primary side / secondary side

⁴⁾ Flanges PN 25 acc. to EN 1092, facing type B (B1)

⁵⁾ Flanges PN 16 acc. to EN 1092, facing type B (B1)

2-pass brazed heat exchangers type XB

Type	XB04-2	XB10-2	XB20-2	XB30-2	XB51L-2, XB51H-2
Max. working pressure (bar)	25 (16) ¹⁾				
Max. operating temp. (°C)	180				
Min. operating temp. ²⁾ (°C)	-10				
Flow medium	Circulation water / glycolic water up to 50%				
Volume/channel (litres)	0,060	0,050	0,060	0,075	0,210
Connection type	Cylindrical external thread acc. to DIN ISO 228/1				
Connection size	G ¾ A	G 1 A			G 2 A
Plate material	Stainless steel, mat. no. 1.4404				
Brazing material	Copper				

¹⁾ 16 bar versions are available on enquiry (all types except XB 04-2).

²⁾ At flow temperatures below 2 °C glycolic water must be used

To avoid corrosion and leakage in the copper brazed plate heat exchangers please observe Danfoss recommendations for the water quality in the guideline on www.heating.danfoss.com (Documentation).

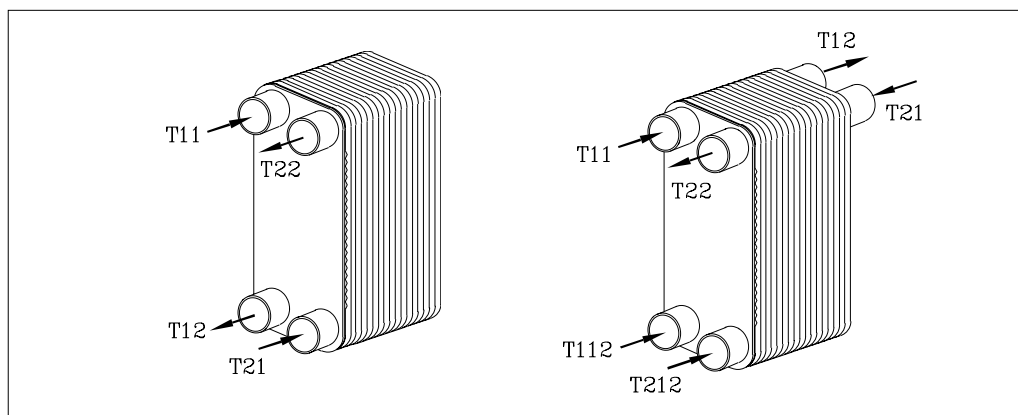
For the standard range of heat exchangers material 1.4404 (316L) has been selected to achieve:

- good delivery service
- good balance between low price and avoiding corrosion in the most common applications
- 1.4404 offers better corrosion properties than e.g. 1.4301 but is more expensive.

Attention must always be paid to the water condition when selecting material for a heat exchanger. The heat exchangers can be delivered in other materials on request.

Design and function

- T11** - Primary side in
- T12** - Primary side out
- T112** - Primary side second inlet (2-pass)
- T21** - Secondary side in
- T22** - Secondary side out
- T212** - Secondary side second inlet (2-pass)



The heat exchangers are made of shape-pressed and brazed heat exchange plates, between which the flow channels are created. The heavy turbulence and counterflow principle enable efficient heat transfer. The task of the heat exchanger is to transfer heat from the primary to secondary flow through a heat transfer plate thus preventing the flows from mixing with each other.

The 2-pass heat exchanger should be chosen for domestic hot water. The 2-pass heat exchanger will often cool the district heating water to below 25 °C. This capacity can be achieved by using a larger temperature difference, a smaller water flow and a heat exchanger with an optimum heat transfer area. This will affect the choice of motorized control valve, for instance.

The choice of heat exchanger is determined by the desired heat output, required temperatures and the permitted pressure losses.

Sizing and selection

Dimensioning and selection of heat exchangers should be carried out with the support of the Danfoss dimensioning program for heat exchangers.

Mounting

It is recommended to mount heat exchangers on their base in vertical position. This will assure the best venting and the least fouling. It is recommended that all pipes connected to the heat exchanger are equipped with shut-off valves for maintenance purposes.

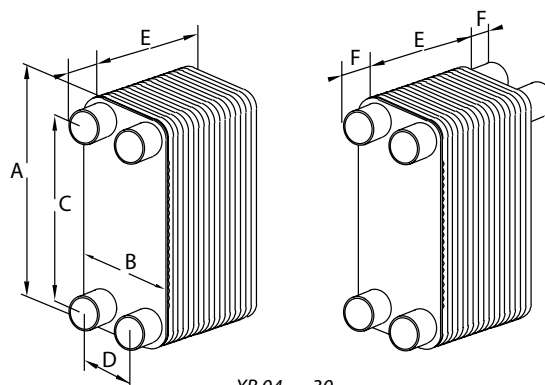
The pipes to be connected must be mounted so that the strain caused by the thermal expansion, for instance, does not harm the heat exchanger.

The pipes must be equipped with brackets to prevent any torsional stress concentration at the heat exchanger's pipe connections.

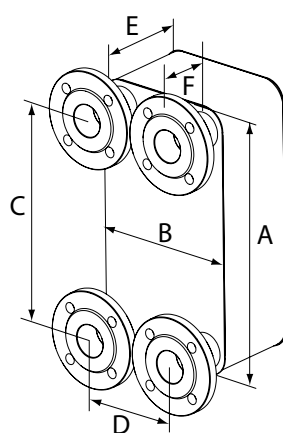
It is recommended that the heat exchanger is equipped with insulation.

Use a safety valve between a heat exchanger and a shut off valve on the secondary side to avoid breaking of the heat exchanger due to thermal expansion of liquid.

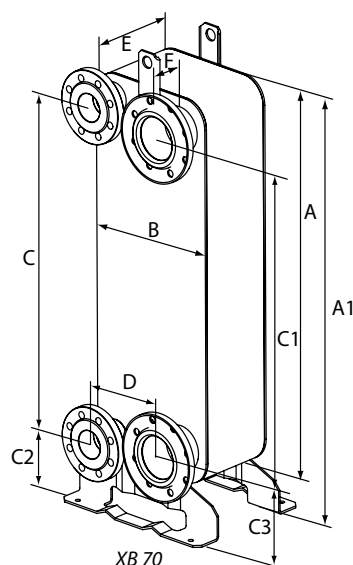
Dimensions



XB 04 ... 30



XB 51 ... SB



XB 70

Type	Connection	External dimensions [mm]						Weight empty [kg]
		A/A1	B	C/C1 C2/C3	D	E	F	
XB04-1-...	G ¾ A ¹⁾	296	93	248	45	11 + 2,25 × n	20	0,9 + n × 0,085
XB04-2-...	G ¾ A ¹⁾	296	93	248	45	11 + 2,25 × n	20	1,13 + n × 0,085
XB10-...	G 1 A ¹⁾	288	118	235	65	7 + 2,6 × n	50	1,5 + n × 0,12
XB20-...	G 1 A ¹⁾	343	122	285	65	7 + 2,6 × n	50	1,7 + n × 0,12
XB24-...	G ¾ A ¹⁾	490	93	442	45	11 + 2,25 × n	20	1,4 + n × 0,15
XB30-...	G 1 A ¹⁾	443	122	385	65	7 + 2,6 × n	50	2,13 + n × 0,18
XB51L-...	G 2 A ¹⁾	466	256	380	170	12 + 2,6 × n	50	8 + n × 0,38
XB51H-...								
XB51... SB ⁵⁾								
XB51... SB ⁶⁾	DN 50 ²⁾	466	256	380	170	12 + 2,6 × n	90	18,8 + n × 0,38
XB70L-...	DN 65 ²⁾ / 100 ^{3) 4)}	990/1110	365	861/816 180/203	214	10 + 2,7 × n	90	40 + n × 1,50
XB70M-...								
XB70H-...								

n = number of plates (for 2-pass heat exchangers the sum of fterheating and preheating plates)

¹⁾ Cylindrical external thread acc. to DIN ISO 228/1

²⁾ Flanges PN 25 acc. to EN 1092, facing type B (B1)

³⁾ Primary side / secondary side

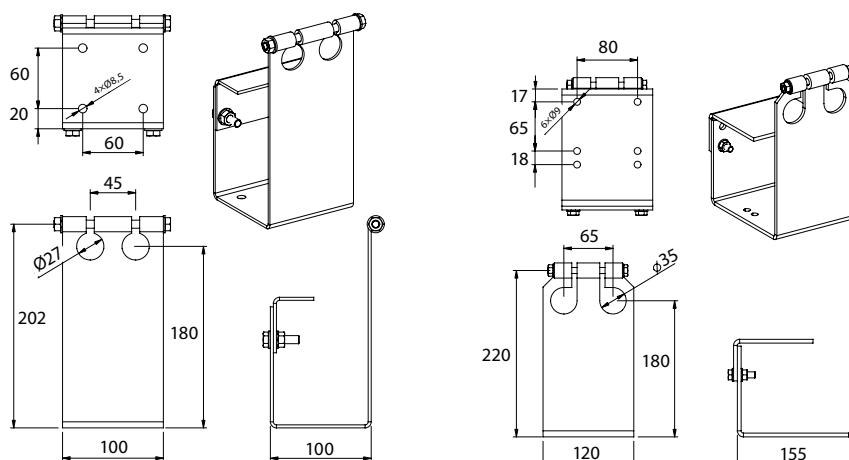
⁴⁾ Flanges PN 16 acc. to EN 1092, facing type B (B1)

⁵⁾ For number of plates n < 60

⁶⁾ For number of plates n ≥ 60

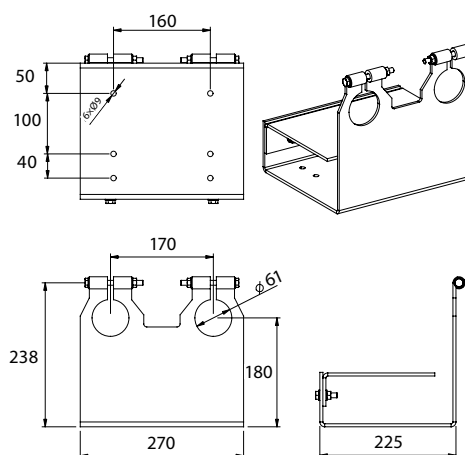
Dimensions (continued)

Mounting brackets

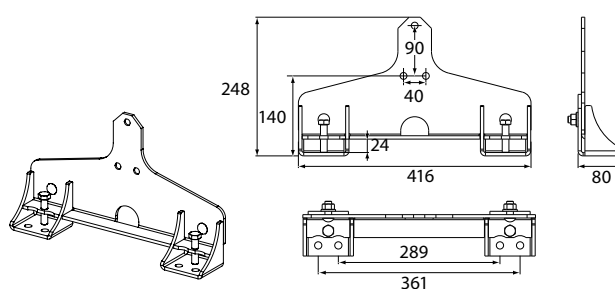


XB04, 24 bracket

XB10, 20, 30 bracket



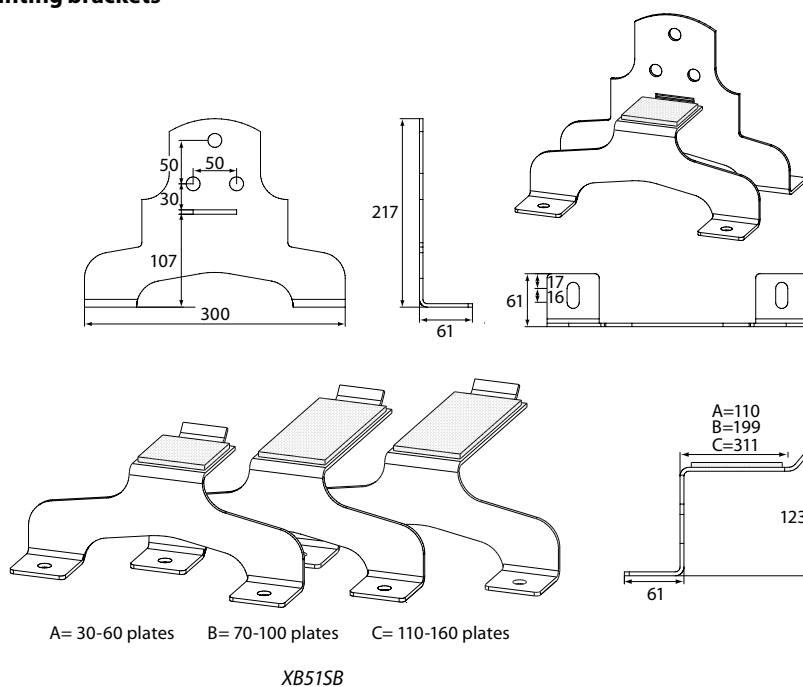
XB51 bracket



XB70 bracket

Dimensions (continued)

Mounting brackets



Tailpieces

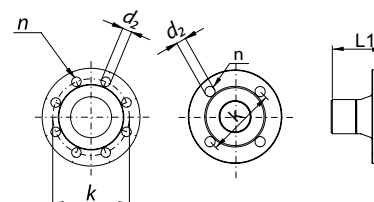
	Description	Connection	Code No.	a	b	SW ¹⁾
				mm		
	Solder tailpieces	G ¾ A / 15 mm	004B2945	15	35	32
		G ¾ A / 18 mm	004B2946	18	35	32
		G 1 A / 15 mm	004B2904	20	35	37
		G 1 A / 18 mm	004B2905	20	35	37
		G 1 A / 22 mm	004B2906	25,6	35	37
		G 2 A / 28 mm	004B2910	32	45	65
		G 2 A / 35 mm	004B2911	39	45	65
		G 2 A / 42 mm	004B2912	51	45	65
	Weld-on tailpieces	G ¾ A / DN 20	004B2944	21,2	35	32
		G 1 A / DN 15	004B2901	21,3	40	37
		G 1 A / DN 20	003H6909	26	49,5	41
		G 1 A / DN 25	004B2903	33,5	40	37
		G 2 A / DN 32	004B2907	42,4	45	65
		G 2 A / DN 40	004B2908	48,5	45	65
		G 2 A / DN 50	004B2909	58	43	65
	Threaded tailpieces	G ¾ A / G ¾ A	004B2947	¾"	40	32
		G ¾ A / G 1 A	004B2953	1"	22	32
		G 1 A / G ¾ A	004B2913	¾"	35	37
		-	-	-	-	-
		-	-	-	-	-

¹⁾ Union nut, width across flats

Flanges

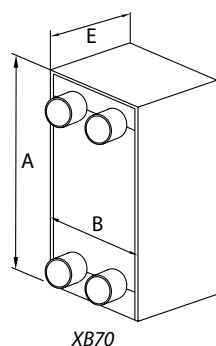
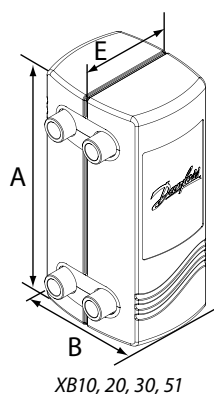
Type	DN	L1	k	d ₂	n	PN (bar)
XB51... SB	50	90	125	18	4	25
XB70	65/100 ¹⁾	90	145/ 180 ¹⁾	18	8	25/ 16 ¹⁾

¹⁾ Primary side/secondary side



Dimensions (continued)

Insulation program (polyurethane) for brazed heat exchangers type XB



Insulations set of PU type for XB70 can be delivered on request. Please contact the local sales representative for details.

Insulation dimensions for 1-pass brazed heat exchangers type XB

Type	XB10-1	XB20-1	XB30-1	XB51-1	XB70-1
No of plates					
8	004B1113 A=336 B=176 E=137	-	-	-	-
10		004B1313 A=385 B=176 E=137	004B1513 A=487 B=176 E=137	004B1924 A=512 B=320 E=197	-
16					-
20					-
26					-
30	004B1124 A=336 B=184 E=197	004B1324 A=385 B=184 E=197	004B1524 A=487 B=184 E=197		-
36	-				
40	-				
50	004B1135 A=336 B=185 E=257	004B1335 A=385 B=185 E=257	004B1535 A=494 B=185 E=257	004B1935 A=512 B=320 E=257	004B2535 A=1202 B=445 E=259
60					-
70					-
80	-	-	004B1550 A=487 B=200 E=337	004B1950 A=512 B=330 E=337	004B2550 A=1202 B=445 E=340
90	-				
100	-				
110	-	-	-	004B1960 A=512 B=340 E=392	004B2570 A=1202 B=445 E=448
120	-	-	-		
140	-	-	-	004B3735 A=512 B=346 E=445	
160	-	-	-	-	004B2599 A=1202 B=445 E=610
180	-	-	-	-	
200	-	-	-	-	

Insulation dimensions for 2-pass brazed heat exchangers type XB

Type	10-2	20-2	30-2	51-2	
No of plates ¹⁾	mm				
10/10	-	-	-	-	
16/16	-	-	-	-	
20/20	004B3115 A=336 B=185 E=257	-	004B3515 A=494 B=185 E=257	-	
26/26		-		-	
30/30		-		-	
36/36	004B3120 A=336 B=188 E=282	-	004B3520 A=494 B=185 E=257	004B3720 A=512 B=320 E=257	
		004B3325 A=385 B=200 E=337		004B3525 A=487 B=200 E=337	004B3725 A=512 B=330 E=337
40/40					
46/46	004B3125 A=336 B=200				
50/50					
56/56	004B3130 A=336 B=207 E=392	004B3330 A=385 B=207 E=392	-	004B3730 A=512 B=340 E=392	
60/60			-		
66/66			-	-	-
70/70	-	-	-		

¹⁾ afterheating/preheating

Data sheet

Micro plate heat exchanger (MPHE): XB05M

Description



Micro Plate Heat Exchangers - a revolutionary technology from Danfoss. Characterized by their unique plate pattern, MPHEs enable heat to be transferred more effectively than any previous model of heat exchangers.

Benefits:

- Energy and cost savings
- Better heat transfer
- Lower pressure loss
- More flexible design
- Longer life time

more on:

MPHE.danfoss.com

XB05M is copper brazed heat exchanger, designed and configured for District Heating, District Cooling and other Heating applications.

Approval:

Pressure Equipment Directive (PED) 97/23/EC.

Ordering

1-pass heat exchanger XB05M

Picture	No. of plates, n	Connection	Code No.
	8	Thread G ¾ A	004B3555
	10		004B3556
	16		004B3557
	20		004B3558
	26		004B3559
	30		004B3560
	36		004B3561
	40		004B3562
	50		004B3563
	60		004B3564
	70		004B3565

Accessories-Tailpieces

Picture	Description	Connection	Code No. ¹⁾
	Solder tailpieces	G ¾ A/15 mm	004B2945
		G ¾ A/18 mm	004B2946
	Weld-on tailpieces	G ¾ A/DN 20	004B2944
	Threaded tailpieces	G ¾ A/G ¾ A	004B2947
		G ¾ A/G 1 A	004B2953

¹⁾ One set contains 2 tailpieces with union nuts and gaskets

Data sheet

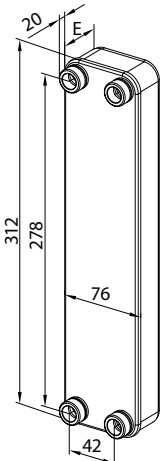
Micro plate heat exchanger (MPHE) XB05M

Technical data

Max. working pressure	bar	25 ¹⁾
Min. / Max. temperature	°C	-10/180
Flow medium		DH: Circulation water / glycolic water up to 50% DC: ethylene-, propylene-glycolic water, ethanol-water solutions and other suitable heat transfer media. (Please contact your Danfoss representative).
Volume/channel	Ltr	0,021
Connection type		Cylindrical external thread acc. to DIN ISO 228/1
Connection size		G ¾ A
Weight	kg	0,58 + 0,045 × n
Materials		
Plate		Stainless steel, EN 1.4404 (AISI 316L)
Brazing		Copper

¹⁾ 16 bar versions are available on enquiry




Dimensions



Type	Connection	E (mm)	Weight empty (kg)
XB05M -...	G ¾ A ¹⁾	8 + 1,19 × n	0,58 + 0,045 × n

n = number of plates
¹⁾ Cylindrical external thread acc. to DIN ISO 228/1

Tailpieces

Picture	Description	Connection	a	b	SW ²⁾	Code No.
			mm			
	Solder tailpieces	G ¾A / 15 mm	15	35	32	004B2945
		G ¾A / 18 mm	18	35	32	004B2946
	Weld-on tailpieces	G ¾A / DN 20	21,2	35	32	004B2944
	Threaded tailpieces	G ¾A / G ¾A	¾"	40	32	004B2947
		G ¾A / G 1A	1"	22	32	004B2953

²⁾ Union nut, with across flats

Data sheet

Gasketed heat exchanger XG

Description / application



The XG is a heat exchanger with gaskets and it has been developed for use with district heating and cooling systems. The heat exchangers can be opened for cleaning and for replacement of plates and gaskets. The XG plate heat exchangers with gaskets are manufactured with different plate sizes.

Approvals:

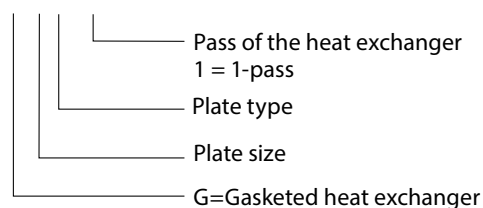
- Pressure Equipment Directive (PED) 97/23/EC
- GOST/Russia

Main data:

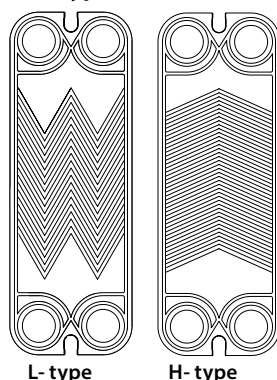
- Min. temperature -10 °C
- Max. temperature +150 °C
- Max. working pressure 16 bar
- Circulation water / glycolic water up to 50%
- Connection size DN (thread or flanged)
25...125

Ordering

Explanation, XG types

XG 10L – 1 – 10 — Number of plates


Special versions for different mediums, connections / couplings, max. operating pressures, materials and capacities are available on request. Please contact the local sales representative for details.

Plate types L - H


The heat exchanger can consist of plates type L or plates type H.

The H- type plate has larger herring bone angle than the L- type plate. H- type plate fits better for certain temperatures than L- type. H- type heat exchangers have better heating capacity, but they also have higher pressure loss.

The same principal difference can be obtained with other plate patterns as well.

Gasketed heat exchangers type XG

Type	XG 10-1	XG 14H-1	XG18H-1	XG 20L-1	XG 20H-1	XG 31L-1	XG 31H-1	XG 40-1	XG 50-1	XG 60-1*	XG 70-1*
Connection	Thread	Thread	Thread	Thread	Thread	Flange	Flange	Place for flange	Place for flange	-	-
	G 1 A	G 1¼ A	G 1¾ A	G 2 A	G 2 A	DN 65	DN 65	DN 100/125 ¹⁾	DN 100/125 ¹⁾		
No of plates, n											
8	-	004B1260	004B1276	-	-	-	-	-	-	-	-
10	004B5005	004B1261	004B1277	004B2954	004B5205	004B1375	004B1389	-	-	-	-
20	004B5010	004B1262	004B1278	004B2955	004B5210	004B1376	004B1390	-	-	-	-
30	004B5015	004B1263	004B1279	004B2956	004B5215	004B1377	004B1391	-	-	-	-
40	004B5020	004B1264	004B1280	004B2957	004B5220	004B1378	004B1392	-	-	-	-
50	004B5025	004B1265	004B1281	004B2958	004B5225	004B379	004B1393	004B1045	004B1091	-	-
60	004B5030	004B1266	004B1282	004B2959	004B5230	004B1380	004B1394	004B1046	004B1092	-	-
70	004B5035	004B1267	004B1283	004B2960	004B5235	004B1381	004B1395	004B1047	004B1093	-	-
80	-	004B1268	004B1284	004B2961	004B5240	004B1382	004B1396	004B1049	004B1094	-	-
90	-	004B1269	004B1285	004B2962	004B5245	004B1383	004B1397	004B1083	004B1095	-	-
100	-	004B1270	004B1286	004B2963	004B5250	004B1384	004B1398	004B1084	004B1096	-	-
110	-	004B1271	004B1287	004B2964	004B5255	004B1385	004B1399	004B1085	004B1097	-	-
120	-	004B1272	004B1288	004B2965	004B5260	004B1386	004B1400	004B1086	004B1098	-	-
130	-	-	-	-	-	004B1387	004B1401	-	-	-	-
140	-	-	-	004B2966	004B5270	004B1388	004B1402	004B1087	004B1099	-	-
150	-	-	-	-	-	-	-	-	-	-	-
160	-	-	-	-	-	-	-	004B1088	004B1100	-	-
180	-	-	-	-	-	-	-	004B1089	004B1101	-	-
200	-	-	-	-	-	-	-	004B1090	004B1102	-	-

* Available on request

¹⁾ Primary / secondary

Accessories

Accessories for gasketed heat exchanger type XG

Type	Code No.			
	Gasket (set of 10) ⁶⁾	Plates (set of 10) ⁶⁾	Special plate set ¹⁾	Special plate set 2-pass ²⁾
XG 10	004B6931³⁾	004B6938	004B2930	004B2931
XG 14H	004B1301⁴⁾	004B1303	004B1309	004B1311
XG 18H	004B1302⁴⁾	004B1304	004B1310	004B1312
XG 20L	004B6932⁴⁾	004B2967	004B2968	004B2969
XG 20H		004B6939	004B2932	004B2933
XG 31L	004B1367⁴⁾	004B1368	004B1403	004B1406
XG 31H		004B1370	004B1404	004B1407
XG 40	004B6934⁴⁾	004B6941	004B2936	004B2937
XG 50	004B6935⁴⁾	004B6942	004B2938	004B2939
XG 60	004B6936⁵⁾	004B6943	004B2940	004B2941
XG 70	004B6937⁵⁾	004B6944	004B2942	004B2943

¹⁾ The set contains front plate, end plate and matching gaskets for 1-pass versions

²⁾ The set contains front plate, end plate, middle plate and matching gaskets for 2-pass versions




³⁾ Non-glued gasket

⁴⁾ Clip-on gasket

⁵⁾ Glued gasket

⁶⁾ Min. order size 10 pieces = 1 set (I-pack). Sets of 250 pieces available on inquiry.

Tailpieces for gasketed heat exchanger type XG

	Description	Suitable for	Connection	Code No. ¹⁾
	Solder tailpieces	XG10	G 1 A / 15 mm	004B2904
			G 1 A / 18 mm	004B2905
			G 1 A / 22 mm	004B2906
XG14, XG18		G 1 ¼ A / 22mm, 28 mm	004B1358	
		XG20	G 2 A / 28 mm	004B2910
G 2 A / 35 mm			004B2911	
G 2 A / 42 mm	004B2912			
	Weld-on tailpieces	XG10	G 1 A / DN 15	004B2901
			G 1 A / DN 20	003H6909
			G 1 A / DN 25	004B2903
		XG14, XG18	G 1¼ A / DN 25	003H6910
			G 1¼ A / DN 32	004B1343
		XG20	G 2 A / DN 32	004B2907
			G 2 A / DN 40	004B2908
G 2 A / DN 50			004B2909	
	Threaded tailpieces	XG10	G 1 A / G 3/4 A	004B2913
			-	-

¹⁾ One set contains 2 tailpieces with unionnuts and gaskets

Accessories continued

Insulation for gasketed heat exchanger type XG

Type	XG 10-1	XG 14H-1	XG 18H-1	XG 20L-1 XG 20H-1	XG 31L-1 XG 31H-1	XG 40-1	XG 50-1
No of plates							
8	-	004B1338	004B1318	-	-	-	-
10	004B5115			004B5315	004B1361	-	-
20						-	-
30						-	-
40	004B5130	004B1314	004B1319	004B5330	004B1362	-	-
50						004B5730	004B5930
60							
70	004B5135	004B1315	004B1320	004B5345	004B1363	004B5745	004B5945
80	-						
90	-						
100	-	004B1316	004B1321	004B5360	004B1365	004B5760	004B5960
110	-						
120	-						
130	-	-	-	-	004B1366	-	-
140	-	-	-	004B5370		004B5790	004B5990
150	-	-	-	-	-	-	-
160	-	-	-	-	-	004B5790	004B5790
180	-	-	-	-	-		
200	-	-	-	-	-	004B5799	004B5999

Insulation properties

Type	Coated steel sheet and polyester insulation
Heatconductivity, λ [W/mK]	0.042
Max temperature, °C	
-Permanent, °C	150
-Short term peak, °C	180
Wall thickness, mm	30

Technical data

Type	XG 10-1	XG 14H-1	XG 18H-1	XG 20L-1 XG 20H-1	XG 31L-1 XG 31H-1	XG 40-1	XG 50-1
Max. working pressure (bar)	16 / (25) ¹⁾						
Max. operating temp. (°C)	150						
Min. operating temp. ²⁾ (°C)	-10						
Flow medium	Circulation water / glycolic water up to 50%						
Volume/channel (litres)	0.045	0.095	0.13	0.480	0.370	1.370	1.710
Heat surface, m ² /plate	0.021	0.049	0.074	0.122	0.141	0.288	0.383
Connection type	Thread ³⁾				Flange, DN	Place for flange ⁴⁾ , DN	
Connection size	G 1 A	G 1¼ A	G 1½ A	G 2 A	DN 65	DN 100/125 ⁵⁾	
Plate material	Stainless steel, mat. no. EN 1.4404						
Gasket material, rubber	EPDM						

¹⁾ PN25 versions are available on inquiry. PN25 versions must be ordered separately using special codes, please contact your sales representative.

²⁾ At flow temp. below 2 °C glycolic water must be used

³⁾ Cylindrical external thread acc. to DIN ISO 228/1

⁴⁾ Flanges PN16, acc. to EN 1092, facing type B (B1)

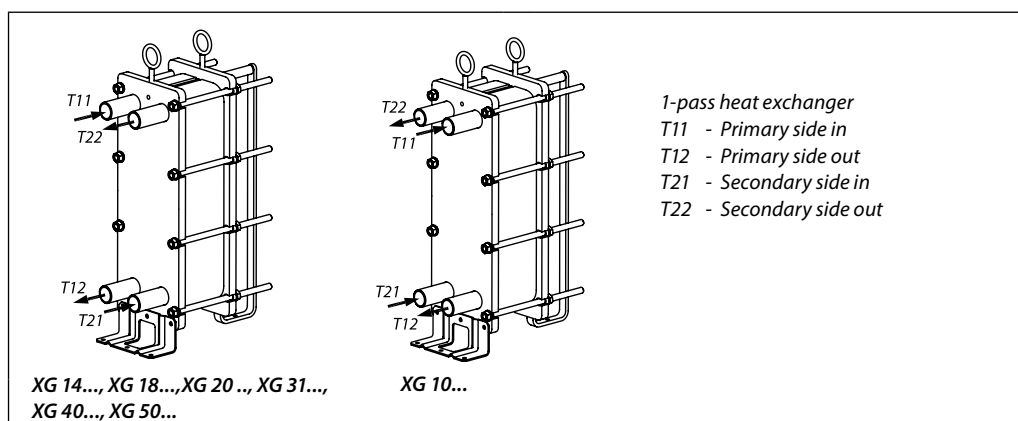
⁵⁾ Primary side / Secondary side

Technical data continued

Heat exchanger water volume	
Primary side	Secondary side
$(n/2-1) \cdot \text{volume/channel}^{(1)}$	$n/2 \cdot \text{volume/channel}^{(1)}$
n = number of plates	

Heat exchanger heat surface
$(n-2) \cdot \text{heat surface/plate}$
n = number of plates

Design and function



The heat exchangers are made of shape-pressed heat plates between which the flow channels are created. Gaskets between the plates separate the flow channels from each other so that the flows do not mix. The heavy turbulence and counter-flow principle enables efficient heat transfer. The task of the heat exchanger is to transfer heat from the primary to secondary flow through a heat transfer plate thus preventing the flows from mixing with each other.

The plate heat exchanger with gaskets can be opened for cleaning and for replacement of plates and gaskets. A stepless output adjustment can be carried out by changing the number of plates.

The choice of heat exchanger is determined by the desired heat output, required temperatures and the permitted pressure losses.

Sizing

Dimensioning and selection of heat exchangers should be carried out with the support of the Danfoss dimensioning program for heat exchangers.

Mounting

The heat exchanger must be mounted in vertical position. Prepare the foundation for the heat exchanger if necessary, always according to local regulations. It is recommended that all pipes connected to the heat exchanger are equipped with shut-off valves for maintenance purposes.

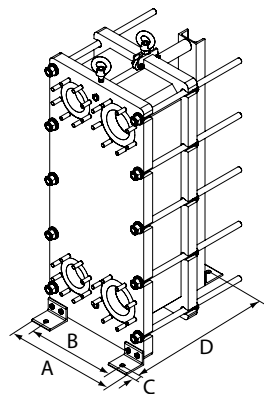
The pipes to be connected must be mounted so that the strain caused by the thermal expansion, for instance, does not harm the heat exchanger.

The pipes must be equipped with brackets to prevent any torsional stress concentration at the heat exchanger's pipe connections.

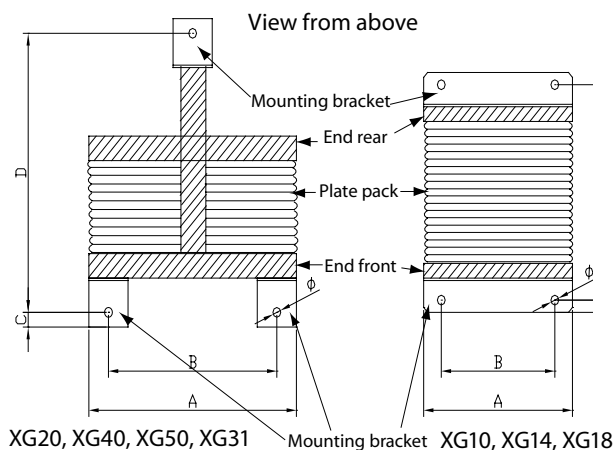
It is recommended that the heat exchanger is equipped with insulation.

A safety valve must be installed between the heat exchanger and the shut-off valves on the secondary side of the heat exchanger. If the safety valve is not installed, thermal expansion of fluid might destroy the heat exchanger when the shut-off valves are closed.

Assembly dimensions



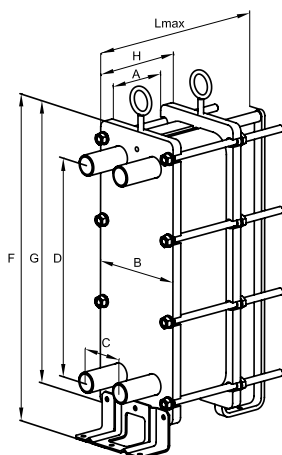
Example of XG40, XG50



Type	A	B	C	Ø
XG10	158	100	15	9
XG14	200	92	12	10
XG18	200	92	12	10
XG20	300	234	20	13
XG31	360	234	20	13
XG40	540	430	30	20
XG50	540	430	30	20

Number of plates	Dimension-D mm						
	XG10	XG14	XG18	XG20	XG31	XG40	XG50
8	-	118	118	-	-	-	-
10	103,5	123	123	491	495	-	-
20	129	146	146	491	645	-	-
30	154,5	169	169	491	645	-	-
40	180	192	192	641	645	-	-
50	205,5	215	215	641	795	850	850
60	231	238	238	641	795	850	850
70	256,5	261	261	791	795	950	950
80	-	284	284	791	795	1150	1150
90	-	307	307	791	945	1150	1150
100	-	330	330	941	945	1150	1150
110	-	353	353	941	945	1150	1150
120	-	376	376	941	1095	1350	1350
130	-	-	-	-	1095	-	-
140	-	-	-	1091	1095	1350	1350
150	-	-	-	-	-	-	-
160	-	-	-	-	-	1650	1650
180	-	-	-	-	-	1650	1650
200	-	-	-	-	-	1650	1650

Dimensions



Type	Connection	External dimensions [mm]								Weight empty [kg]
		A	B	C	D	G	H	F	L _{max}	
XG 10-...	G 1 A ¹⁾	2.55*n	158	65	235	310	A+30	460	500	0.2*n+16
XG 14H-...	G 1 1/4 A ¹⁾	2.4*n	200	80	430	560	A+60	675	550	0.34*n+52
XG 18H-...	G 1 1/4 A ¹⁾	2.4*n	200	80	630	760	A+60	875	550	0.46*n+72
XG 20L-... XG 20H-...	G 2 A ¹⁾	3.5*n	300	140	640	835	A+60	910	1300	0.8*n+125
XG 31L-... XG 31H-...	DN 65 ²⁾	2.95*n	360	150	665	910	A+60	965	1600	1.22*n+170
XG 40-...	DN 100/125 ^{2) 3)}	4.25*n	540	240	856	1198	A+100	1238	2500	2.2*n+550
XG 50-...	DN 100/125 ^{2) 3)}	4.25*n	540	240	1096	1438	A+100	1478	2500	2.8*n+675

n = number of plates

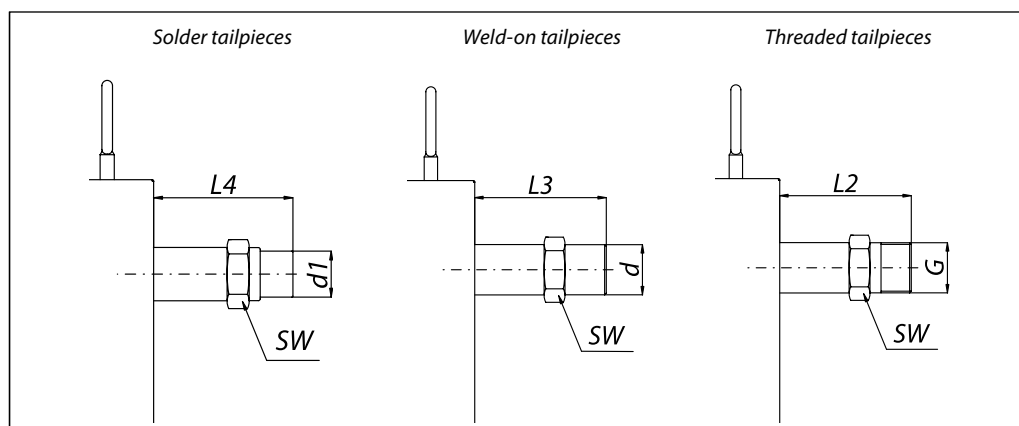
L_{max} = Length of a heat exchanger with maximum number of heat plates

¹⁾ Cylindrical external thread acc. to DIN ISO 228/1

²⁾ Flanges PN16, acc. to EN 1092, facing type B (B1)

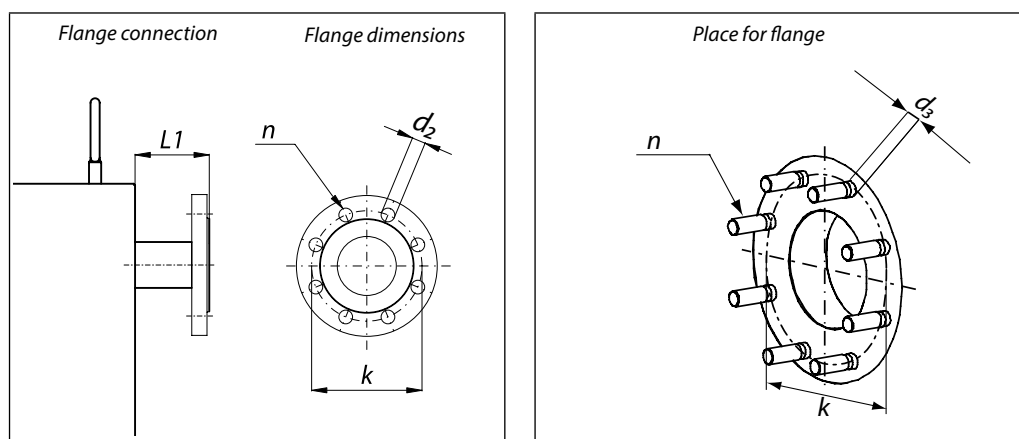
³⁾ Primary side / Secondary side

Dimensions continued



G		G 1 A			G 1 ¼ A		G 2 A		
SW	mm	41			47		71		
G ¹⁾	-	G ¾ A	-	-	-	-	-	-	-
d	mm	21,3 (DN 15)	26,9 (DN 20)	33,5 (DN 25)	33,5 (DN 25)	42,4 (DN 32)	42,4 (DN 32)	48,5 (DN 40)	60,3 (DN 50)
d ₁		15	18	22	22	28	28	35	42
L2		117	-	-	-	-	-	-	-
L3		117	117	117	90	90	175	175	175
L4		117	117	117	90	90	175	175	175

¹⁾ Cylindrical external thread acc. to DIN ISO 228/1

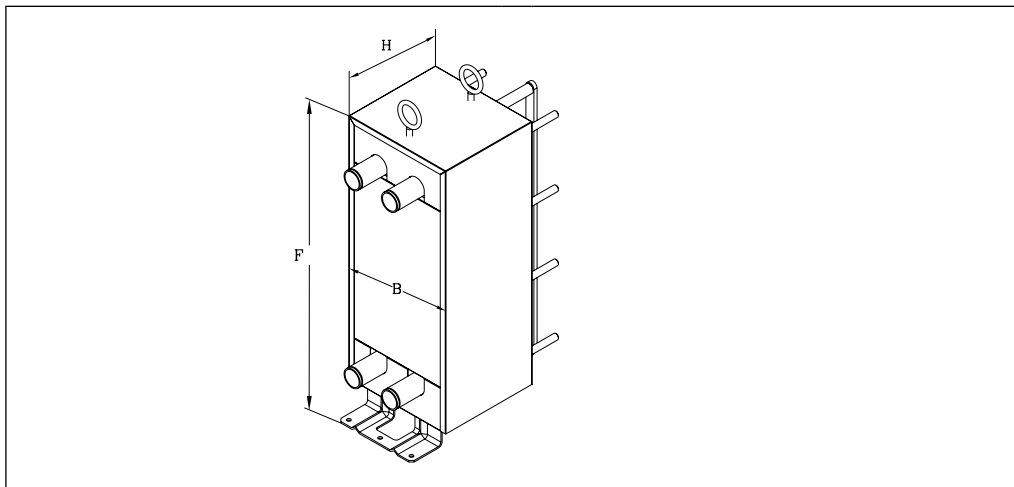


DN		65	100	125
L1 ¹⁾	mm	200/100 ²⁾	Place for flange	Place for flange
k		145	180	210
d ₂		18	18	18
n		4	8	8
d ₃			M16	M16

¹⁾ Flanges PN16, acc. to EN 1092, facing type B (B1)

²⁾ Primary / secondary

Dimensions continued



Insulation for gasketed heat exchanger type XG

Type	XG 10-1	XG 14H-1	XG 18H-1	XG 20L-1 XG 20H-1	XG 31L-1 XG 31H-1	XG 40-1	XG 50-1
F (mm)	490	705	905	940	980	1248	1488
B (mm)	218	260	260	360	420	600	600
No of plates	H (mm)						
8	-	192		-	-	-	-
10	168			225	203	-	-
20						-	-
30						-	-
40	246	264	330	285	-	-	
50					415		
60							
70	272	336	435	368	543		
80	-						
90	-						
100	-	408	540	450	670		
110	-						
120	-						
130	-	-	-	-	505	-	-
140	-	-	-	610		925	
150	-	-	-	-	-	-	-
160	-	-	-	-	-	925	
180	-	-	-	-	-		
200	-	-	-	-	-	1010	



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