

Technical specifications

Brazed plate heat exchanger (BHE) data and dimensions

	CBH16	CBH18	CB20	CB30	CB60
Channel type	H, A	H, A	H	H, M, L	H, M, L
Max./min. design temperature (°C)	225/-160	150/-50	225/-196	225/-196	175/-196
Max. design pressure at 150° C (S3-S4/S1-S2) (bar) *	32/32	32/32	16/16	36/36	36/36
Volume/channel (S3-S4/S1-S2) (litres)	0.027 (H) ⁴⁾	0.038 (H) ⁵⁾	0.028	0.054	0.103 (H) ⁶⁾
Max. flowrate (S3-S4/S1-S2) (m ³ /h) **	3.6	3.6	8.9	14.5	14.5
Height, a (mm)	211	316	324	313	527
Width, b (mm)	74	74	94	113	113
Vertical connection distance, c (mm)	172	278	270	250	466
Horizontal connection distance, d (mm)	40	40	46	50	50
Plate pack length, A (mm)	(n x 2.16) + 8	(n x 2.16) + 8	(n x 1.5) + 8	(n x 2.31) + 13	(n x 2.35) + 13
Weight empty (kg) ***	(n x 0.04) + 0.27	(n x 0.07) + 0.4	(n x 0.08) + 0.6	(n x 0.1) + 1.2	(n x 0.18) + 2.1
Standard connection, external thread (in)	3/4"	3/4"	1"	1 1/4" / 1"	1 1/4" / 1"
Plate material	AISI 316	AISI 316	AISI 316	AISI 316	AISI 316
Connection material	AISI 316	AISI 316	AISI 316	AISI 316	AISI 316
Brazing material	Copper	Copper	Copper	Copper	Copper
Max. number of plates	60	60	110	150	150

	CB110 ⁸⁾	CB112	CB200 (CBH200)	CB300	CB400
Channel type	H, L, M	H, L, M, AM, AH	H, L, M	H, L, M	H, L
Max./min. design temperature (°C)	225/-196	225/-196	225/-196	225/-196	225/-196
Max. design pressure at 150° C (S3-S4/S1-S2) (bar) *	32/32	32/32	26/26	27/16	32/27
Volume/channel (S3-S4/S1-S2) (litres)	0.21	0.18 ⁷⁾	0.51	0.58/0.69	0.74
Max. flowrate (S3-S4/S1-S2) (m ³ /h) **	51	34/63	128	200	200
Height, a (mm)	491	618	740	990	990
Width, b (mm)	250	191	323	365	390
Vertical connection distance, c (mm)	378	519	622	816/861	825
Horizontal connection distance, d (mm)	138	92	205	213.5	225
Plate pack length, A (mm)	(n x 2.2) + 12	(n x 2.05) + 15	(n x 2.7) + 11 / (n x 2.7) + 14	(n x 2.62) + 11	(n x 2.56) + 14
Weight empty (kg) ***	(n x 0.38) + 13	(n x 0.35) + 4.8	(n x 0.6) + 12 / (n x 0.6) + 14	(n x 1.26) + 21	(n x 1.35) + 24
Standard connection, external thread (in)	ISO G2"/2 1/2"	3" weld/2"	3"	4"/2 1/2"	4"
Plate material	AISI 316	AISI 316	AISI 316	AISI 316	AISI 316
Connection material	AISI 316	AISI 316	AISI 316	AISI 316	AISI 316
Brazing material	Copper	Copper	Copper	Copper	Copper
Max. number of plates	300	300	230	250	270

*) According to PED

1) M and L channels 29/28 bar

4) A channel (0.030/0.024)

7) AH and AM channels 0.20/0.16

**) Water at 5 m/s (connection velocity)

2) E channel 0.18/0.18; A channel 0.18/0.25

5) A channel (0.042/0.035)

8) Released during 2012

**) excluding connections n = number of plates

3) A channels (n x 2.5) + 10, E channels (n x 2.2) + 10

6) L and M channels 0.13

Brazed plate heat exchangers range

CB16/CBH16	CB18/CBH18	CB20	CB30/CBH30
Read all about it on page 7:11	Read all about it on page 7:13	Read all about it on page 7:15	Read all about it on page 7:17
			
CB60/CBH60	CB110/CBH110	CB112/CBH112	CB200/CBH200
Read all about it on page 7:19	Read all about it on page 7:21	Read all about it on page 7:23	Read all about it on page 7:25
			
CB300/CBH300	CB400		
Read all about it on page 7:27	Read all about it on page 7:29		
			

CB16 / CBH16

Brazed Plate Heat Exchanger

General information

Alfa Laval introduced its first brazed plate heat exchanger (BHE) in 1977 and has since continuously developed and optimized its performance and reliability.

Brazing the stainless steel plates together eliminates the need for gaskets and thick frame plates. The brazing material seals and holds the plates together at the contact points ensuring optimal heat transfer efficiency and pressure resistance. The plate design guarantees the longest possible life.

The design options of the brazed heat exchanger are extensive. Different plate patterns are available for various duties and performance specifications. You can choose a standard configuration BHE, or a unit designed according to your own specific needs. The choice is entirely yours.

Typical applications

- HVAC heating/cooling
- Refrigerant applications
- Industrial cooling/heating
- Oil cooling

Working principles

The heating surface consists of thin corrugated metal plates stacked on top of each other. Channels are formed between the plates and corner ports are arranged so that the two media flow through alternate channels, usually in countercurrent flow for the most efficient heat transfer process.

Standard design

The plate pack is covered by cover plates. Connections are located in the front or rear cover plate. To improve the heat transfer design, the channel plates are corrugated.

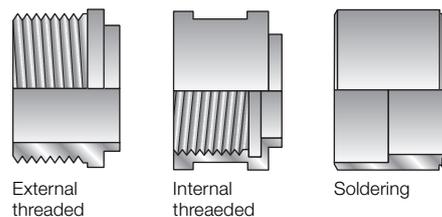
Particulars required for quotation

To enable Alfa Laval's representative to make a specific quotation, specify the following particulars in your enquiry:

- Required flow rates or heat load
- Temperature program
- Physical properties of liquids in question
- Desired working pressure
- Maximum permitted pressure drop



Examples of connections*

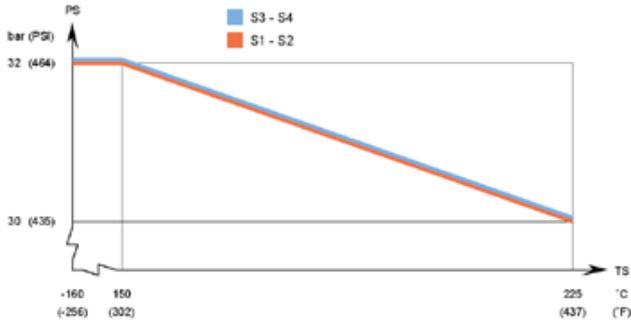


* More connections are available on request.

CB16 - PED approval pressure/temperature graph*



CBH16 - PED approval pressure/temperature graph*



CB16 - UL approval pressure/temperature graph*



CBH16 - UL approval pressure/temperature graph*



Standard dimensions and weight*

CB16
 A measure mm = $7 + (2.16 * n) (+/-2 \%)$
 A measure inch = $0.28 + (0.09 * n) (+/-2 \%)$
 Weight** kg = $0.14 + (0.04 * n)$
 Weight** lb = $0.3 + (0.09 * n)$

CBH16
 A measure mm = $8 + (2.16 * n) (+/-2 \%)$
 A measure inch = $0.31 + (0.09 * n) (+/-2 \%)$
 Weight** kg = $0.27 + (0.04 * n)$
 Weight** lb = $0.59 + (0.09 * n)$

(n = number of plates)

* Excluding connections

Standard data

Min. working temperature	see graph
Max. working temperature	see graph
Min. working pressure	vacuum
Max. working pressure	see graph
Volume per channel H, litres (ga)	0.027 (0.0070)
Volume per channel A, litres (ga)	0.030 (0.0078)
	0.024 (0.0063)
Max. flowrate* m ³ /h (gpm)	3.62 (15.93)
Min. nbr of plates	4
Max. nbr of plates	60

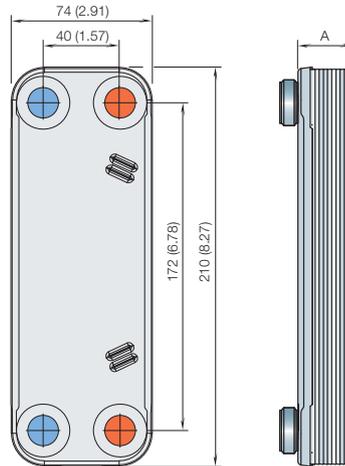
* Water at 5 m/s (16.4 ft/s) (connection velocity)

Standard materials

Cover plates	Stainless steel
Connections	Stainless steel
Plates	Stainless steel
Brazing filler	Copper

Standard dimensions

mm (inch)



CB18 / CBH18

Brazed Plate Heat Exchanger

General information

Alfa Laval introduced its first brazed plate heat exchanger (BHE) in 1977 and has since continuously developed and optimized its performance and reliability.

Brazing the stainless steel plates together eliminates the need for gaskets and thick frame plates. The brazing material seals and holds the plates together at the contact points ensuring optimal heat transfer efficiency and pressure resistance. The plate design guarantees the longest possible life.

The design options of the brazed heat exchanger are extensive. Different plate patterns are available for various duties and performance specifications. You can choose a standard configuration BHE, or a unit designed according to your own specific needs. The choice is entirely yours.

Typical applications

- HVAC heating/cooling
- Refrigerant applications
- Industrial cooling/heating
- Oil cooling

Working principles

The heating surface consists of thin corrugated metal plates stacked on top of each other. Channels are formed between the plates and corner ports are arranged so that the two media flow through alternate channels, usually in countercurrent flow for the most efficient heat transfer process.

Standard design

The plate pack is covered by cover plates. Connections are located in the front or rear cover plate. To improve the heat transfer design, the channel plates are corrugated.

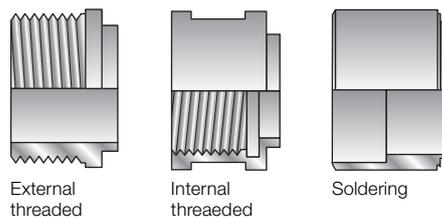
Particulars required for quotation

To enable Alfa Laval's representative to make a specific quotation, specify the following particulars in your enquiry:

- Required flow rates or heat load
- Temperature program
- Physical properties of liquids in question
- Desired working pressure
- Maximum permitted pressure drop

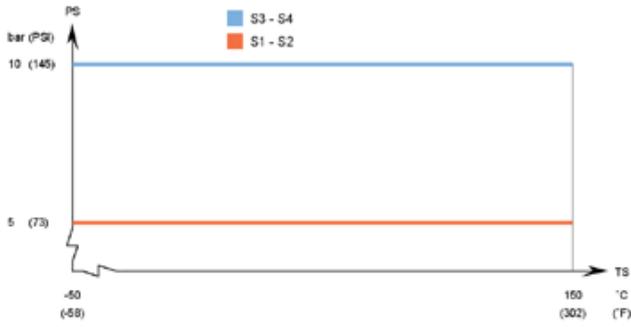


Examples of connections*

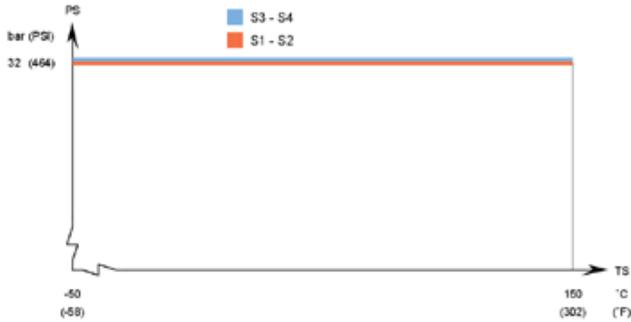


* More connections are available on request.

CB18 - PED approval pressure/temperature graph* H, A



CBH18 - PED approval pressure/temperature graph* H



CB18 - UL approval pressure/temperature graph*



CBH18 - UL approval pressure/temperature graph*



Standard dimensions and weight*

CB18
 A measure mm = $7 + (2.16 * n) (+/-2 \%)$
 A measure inch = $0.28 + (0.09 * n) (+/-2 \%)$
 Weight** kg = $0.22 + (0.07 * n)$
 Weight** lb = $0.48 + (0.15 * n)$

CBH18
 A measure mm = $8 + (2.16 * n) (+/-2 \%)$
 A measure inch = $0.31 + (0.09 * n) (+/-2 \%)$
 Weight** kg = $0.4 + (0.07 * n)$
 Weight** lb = $0.88 + (0.15 * n)$

(n = number of plates)
 * Excluding connections

Standard data

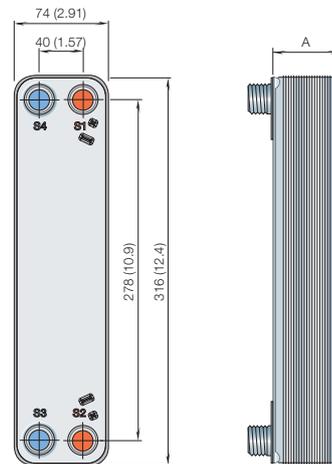
Min. working temperature	see graph
Max. working temperature	see graph
Min. working pressure	vacuum
Max. working pressure	see graph
Volume per channel H, litres (ga)	0.038 (0.010)
Volume per channel A, litres (ga)	0.042 (0.011)
	0.035 (0.009)
Max. particle size mm (inch)	1.1 (0.04)
Max. flowrate* m ³ /h (gpm)	3.62 (15.93)
Min. nbr of plates	4
Max. nbr of plates	60

* Water at 5 m/s (16.4 ft/s) (connection velocity)

Standard materials

Cover plates	Stainless steel
Connections	Stainless steel
Plates	Stainless steel
Brazing filler	Copper

Standard dimensions
 mm (inch)



CB20

Brazed Plate Heat Exchanger

General information

Alfa Laval introduced its first brazed plate heat exchanger (BHE) in 1977 and has since continuously developed and optimized its performance and reliability.

Brazing the stainless steel plates together eliminates the need for gaskets and thick frame plates. The brazing material seals and holds the plates together at the contact points ensuring optimal heat transfer efficiency and pressure resistance. The plate design guarantees the longest possible life.

The design options of the brazed heat exchanger are extensive. Different plate patterns are available for various duties and performance specifications. You can choose a standard configuration BHE, or a unit designed according to your own specific needs. The choice is entirely yours.

Typical applications

- HVAC heating/cooling
- Refrigerant applications
- Industrial cooling/heating
- Oil cooling

Working principles

The heating surface consists of thin corrugated metal plates stacked on top of each other. Channels are formed between the plates and corner ports are arranged so that the two media flow through alternate channels, usually in countercurrent flow for the most efficient heat transfer process.

Standard design

The plate pack is covered by cover plates. Connections are located in the front or rear cover plate. To improve the heat transfer design, the channel plates are corrugated.

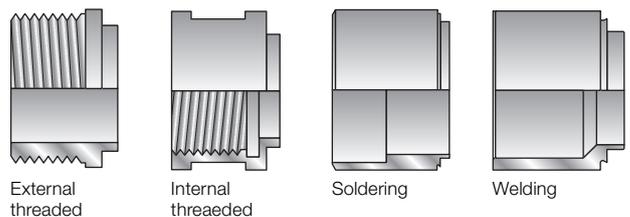
Particulars required for quotation

To enable Alfa Laval's representative to make a specific quotation, specify the following particulars in your enquiry:

- Required flow rates or heat load
- Temperature program
- Physical properties of liquids in question
- Desired working pressure
- Maximum permitted pressure drop

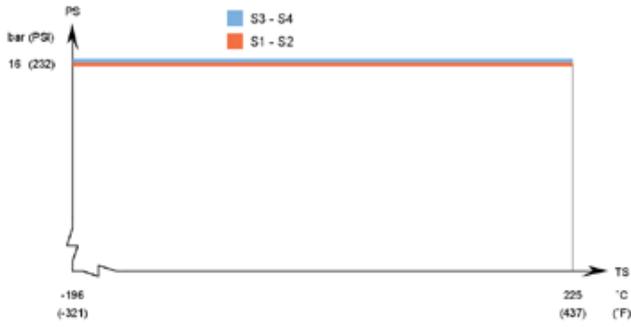


Examples of connections



* More connections are available on request.

CB20 - PED approval pressure/temperature graph*



Standard dimensions and weight*

- A measure mm = $8 + (1.5 * n)$ (+/-3 mm)
- A measure inch = $0.31 + (0.06 * n)$ (+/-0.12 inch)
- Weight** kg = $0.6 + (0.08 * n)$
- Weight** lb = $1.32 + (0.18 * n)$

(n = number of plates)
 * Excluding connections

Standard data

Min. working temperature	see graph
Max. working temperature	see graph
Min. working pressure	vacuum
Max. working pressure	see graph
Volume per channel, litres (ga)	0.028 (0.007)
Max. particle size mm (inch)	0.6 (0.02)
Max. flowrate* m ³ /h (gpm)	8.9 (39.16)
Min. nbr of plates	10
Max. nbr of plates	110

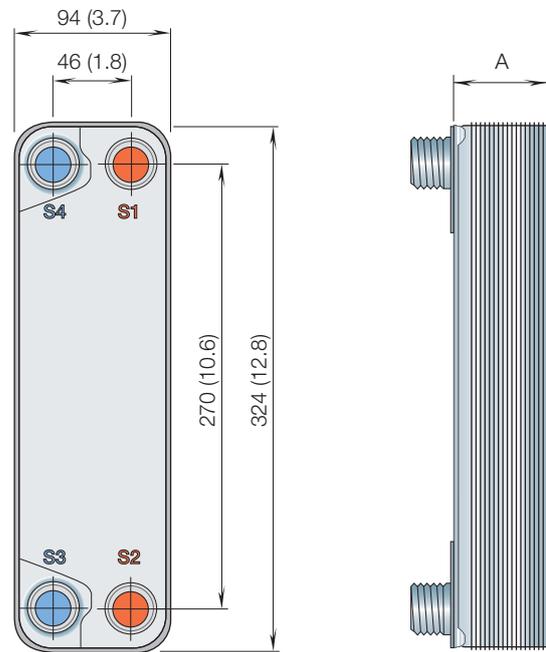
* Water at 5 m/s (16.4 ft/s) (connection velocity)

Standard materials

Cover plates	Stainless steel
Connections	Stainless steel
Plates	Stainless steel
Brazing filler	Copper

Standard dimensions

mm (inch)



CB30 / CBH30

Brazed Plate Heat Exchanger

General information

Alfa Laval introduced its first brazed plate heat exchanger (BHE) in 1977 and has since continuously developed and optimized its performance and reliability.

Brazing the stainless steel plates together eliminates the need for gaskets and thick frame plates. The brazing material seals and holds the plates together at the contact points ensuring optimal heat transfer efficiency and pressure resistance. The plate design guarantees the longest possible life.

The design options of the brazed heat exchanger are extensive. Different plate patterns are available for various duties and performance specifications. You can choose a standard configuration BHE, or a unit designed according to your own specific needs. The choice is entirely yours.

Typical applications

- HVAC heating/cooling
- Refrigerant applications
- Industrial cooling/heating
- Oil cooling

Working principles

The heating surface consists of thin corrugated metal plates stacked on top of each other. Channels are formed between the plates and corner ports are arranged so that the two media flow through alternate channels, usually in countercurrent flow for the most efficient heat transfer process.

Standard design

The plate pack is covered by cover plates. Connections are located in the front or rear cover plate. To improve the heat transfer design, the channel plates are corrugated.

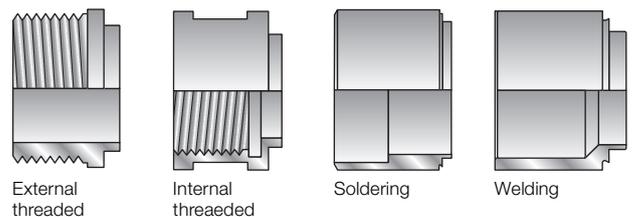
Particulars required for quotation

To enable Alfa Laval's representative to make a specific quotation, specify the following particulars in your enquiry:

- Required flow rates or heat load
- Temperature program
- Physical properties of liquids in question
- Desired working pressure
- Maximum permitted pressure drop

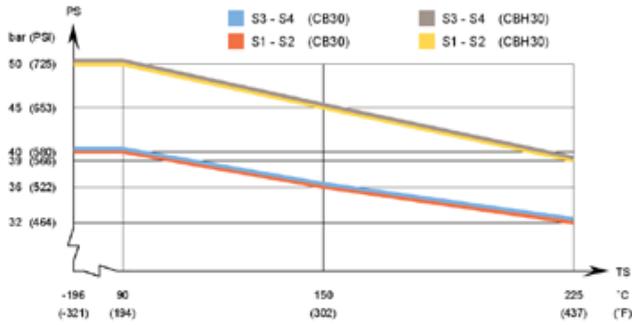


Examples of connections

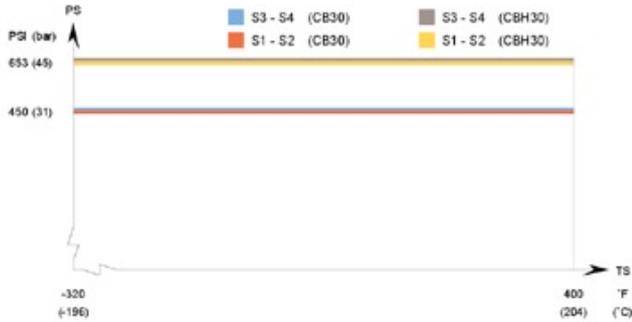


* More connections are available on request.

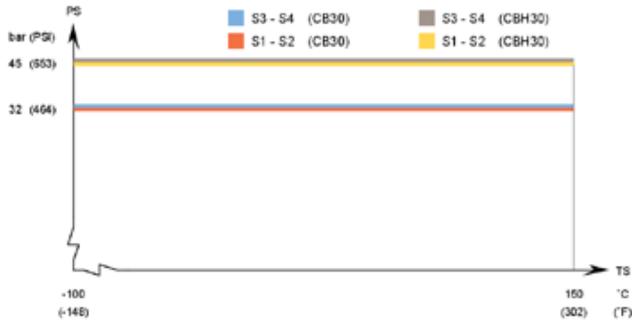
CB30 / CBH30 - PED approval pressure/temperature graph*



CB30 / CBH30 - UL approval pressure/temperature graph*



CB30 / CBH30 - KHK and KRA approval pressure/temperature graph*



Standard data

Min. working temperature	see graph
Max. working temperature	see graph
Min. working pressure	vacuum
Max. working pressure	see graph
Volume per channel, litres (ga)	0.054 (0.014)
Max. particle size mm (inch)	1 (0.04)
Max. flowrate* m ³ /h (gpm)	14.5 (63.7)
Min. nbr of plates	4
Max. nbr of plates	150

* Water at 5 m/s (16.4 ft/s) (connection velocity)

Standard materials

Cover plates	Stainless steel
Connections	Stainless steel
Plates	Stainless steel
Brazing filler	Copper

Standard dimensions and weight*

CB30

A measure mm	= 13 + (2.31 * n) (+/-2 mm or +/-1.5 %)
A measure inch	= 0.51 + (0.09 * n) (+/-0.08 inch or +/-1.5 %)
Weight** kg	= 1.2 + (0.11 * n)
Weight** lb	= 2.65 + (0.24 * n)

CBH30

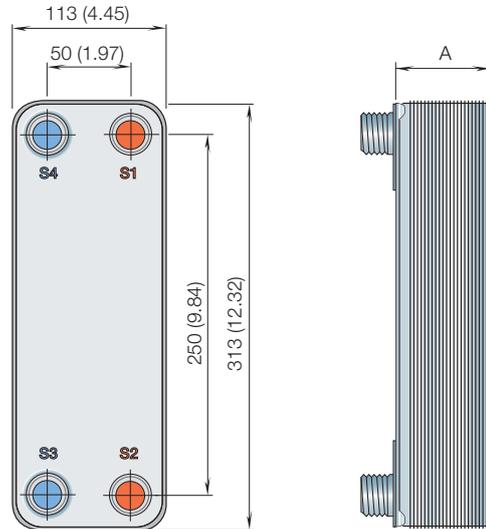
A measure mm	= 15 + (2.31 * n) (+/-1.5 %)
A measure inch	= 0.59 + (0.09 * n) (+/-1.5 %)
Weight** kg	= 1.35 + (0.11 * n)
Weight** lb	= 2.98 + (0.24 * n)

(n = number of plates)

* Excluding connections

Standard dimensions

mm (inch)



CB60 / CBH60

Brazed Plate Heat Exchanger

General information

Alfa Laval introduced its first brazed plate heat exchanger (BHE) in 1977 and has since continuously developed and optimized its performance and reliability.

Brazing the stainless steel plates together eliminates the need for gaskets and thick frame plates. The brazing material seals and holds the plates together at the contact points ensuring optimal heat transfer efficiency and pressure resistance. The plate design guarantees the longest possible life.

The design options of the brazed heat exchanger are extensive. Different plate patterns are available for various duties and performance specifications. You can choose a standard configuration BHE, or a unit designed according to your own specific needs. The choice is entirely yours.

Typical applications

- HVAC heating/cooling
- Refrigerant applications
- Industrial cooling/heating
- Oil cooling

Working principles

The heating surface consists of thin corrugated metal plates stacked on top of each other. Channels are formed between the plates and corner ports are arranged so that the two media flow through alternate channels, usually in countercurrent flow for the most efficient heat transfer process.

Standard design

The plate pack is covered by cover plates. Connections are located in the front or rear cover plate. To improve the heat transfer design, the channel plates are corrugated.

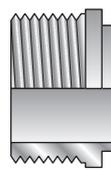
Particulars required for quotation

To enable Alfa Laval's representative to make a specific quotation, specify the following particulars in your enquiry:

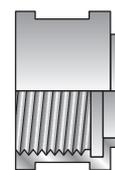
- Required flow rates or heat load
- Temperature program
- Physical properties of liquids in question
- Desired working pressure
- Maximum permitted pressure drop



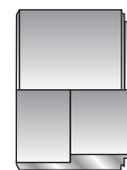
Examples of connections



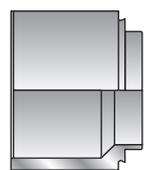
External threaded



Internal threaded



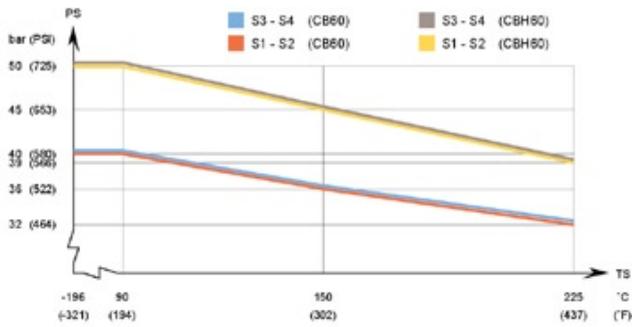
Soldering



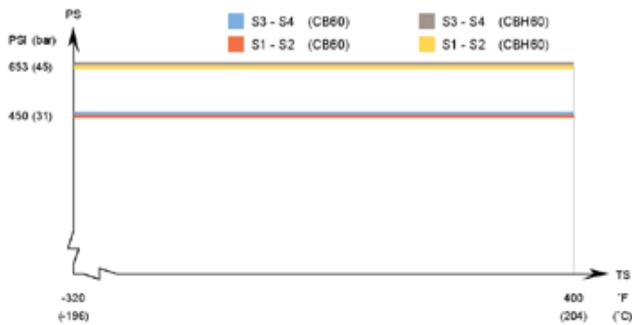
Welding

* More connections are available on request.

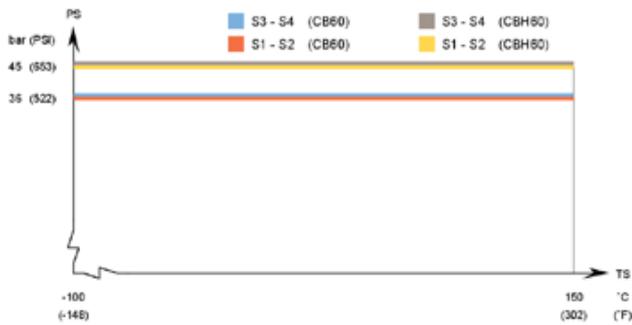
CB60 and CBH60 - PED approval pressure/temperature graph*



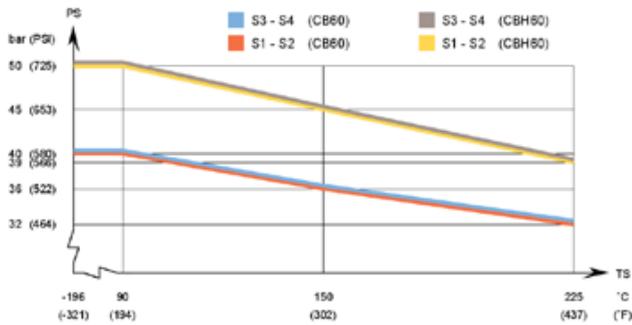
CB60 and CBH60 - UL approval pressure/temperature graph*



CB60 / CBH60 - KHK and KRA approval pressure/temperature graph*



CB60 / CBH60 - CRN approval pressure/temperature graph*



Standard data

Min. working temperature	see graph
Max. working temperature	see graph
Min. working pressure	vacuum
Max. working pressure	see graph
Volume per channel, litres (ga)	0.10 (0.027)
Max. particle size mm (inch)	1 (0.04)
Max. flowrate* m ³ /h (gpm)	14.5 (63.7)
Min. nbr of plates	4
Max. nbr of plates	150

* Water at 5 m/s (16.4 ft/s) (connection velocity)

Standard materials

Cover plates	Stainless steel
Connections	Stainless steel
Plates	Stainless steel
Brazing filler	Copper

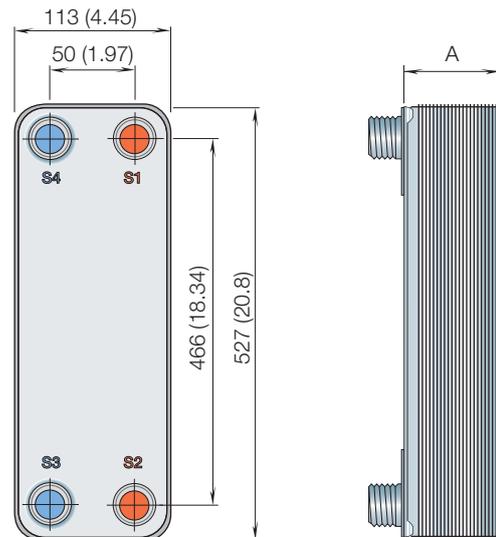
Standard dimensions and weight*

A measure mm = $13 + (2.35 * n) (+/-1.5 \%)$
 A measure inch = $0.51 + (0.09 * n) (+/-1.5 \%)$
 Weight** kg = $2.1 + (0.18 * n)$
 Weight** lb = $4.63 + (0.4 * n)$

(n = number of plates)
 * Excluding connections

Standard dimensions

mm (inch)



CB110 / CBH110 (Preliminary)

Brazed Plate Heat Exchanger

General information

Alfa Laval introduced its first brazed plate heat exchanger (BHE) in 1977 and has since continuously developed and optimized its performance and reliability.

Brazing the stainless steel plates together eliminates the need for gaskets and thick frame plates. The brazing material seals and holds the plates together at the contact points ensuring optimal heat transfer efficiency and pressure resistance. The plate design guarantees the longest possible life.

The design options of the brazed heat exchanger are extensive. Different plate patterns are available for various duties and performance specifications. You can choose a standard configuration BHE, or a unit designed according to your own specific needs. The choice is entirely yours.

Typical applications

- HVAC heating/cooling
- Industrial heating/cooling
- Condensing
- Tap water
- Oil cooling
- Air dryer
- Solar heating

Working principles

The heating surface consists of thin corrugated metal plates stacked on top of each other. Channels are formed between the plates and corner ports are arranged so that the two media flow through alternate channels, usually in countercurrent flow for the most efficient heat transfer process.

Standard design

The plate pack is covered by cover plates. Connections are located in the front or rear cover plate. To improve the heat transfer design, the channel plates are corrugated.

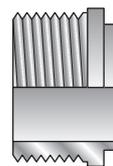
Particulars required for quotation

To enable Alfa Laval's representative to make a specific quotation, specify the following particulars in your enquiry:

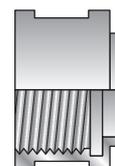
- Required flow rates or heat load
- Temperature program
- Physical properties of liquids in question
- Desired working pressure
- Maximum permitted pressure drop



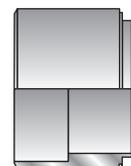
Examples of connections*



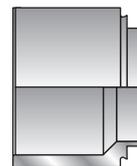
External threaded



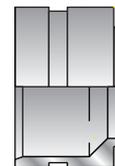
Internal threaded



Soldering



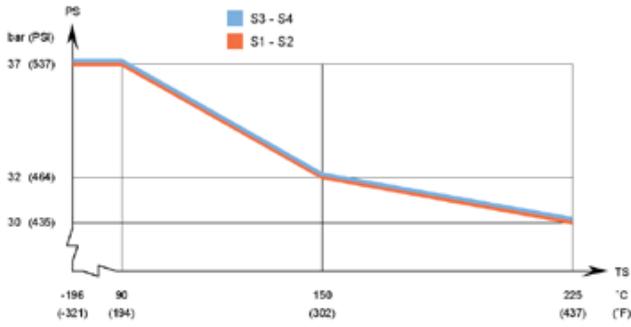
Welding



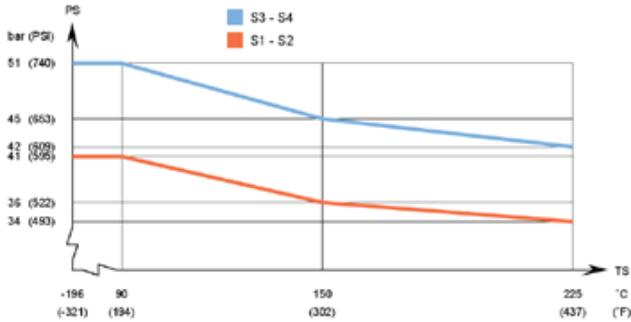
Vitaulic

* More connections are available on request.

CB110 - PED approval pressure/temperature graph*



CBH110 - PED approval pressure/temperature graph*



Standard dimensions and weight*

CB110

- A measure mm = $15 + (2.51 * n)$ (+/-2 mm or +/-1.5 %)
- A measure inch = $0.59 + (0.1 * n)$ (+/-0.08 inch or +/-1.5 %)
- Weight** kg = $4.82 + (0.28 * n)$
- Weight** lb = $10.63 + (0.62 * n)$

CBH110

- A measure mm = $19 + (2.51 * n)$ (+/-2 mm or +/-1.5 %)
- A measure inch = $0.75 + (0.1 * n)$ (+/-0.08 inch or +/-1.5 %)
- Weight** kg = $5.68 + (0.28 * n)$
- Weight** lb = $12.52 + (0.62 * n)$

(n = number of plates)

* Excluding connections

Standard data

Min. working temperature	see graph
Max. working temperature	see graph
Min. working pressure	vacuum
Max. working pressure	see graph
Volume per channel H, L, M, litres (ga)	0.21 (0.054)
Max. particle size mm (inch)	1.2 (0.05)
Max. flowrate* m ³ /h (gpm)	51 (224)
Min. nbr of plates	10
Max. nbr of plates	300

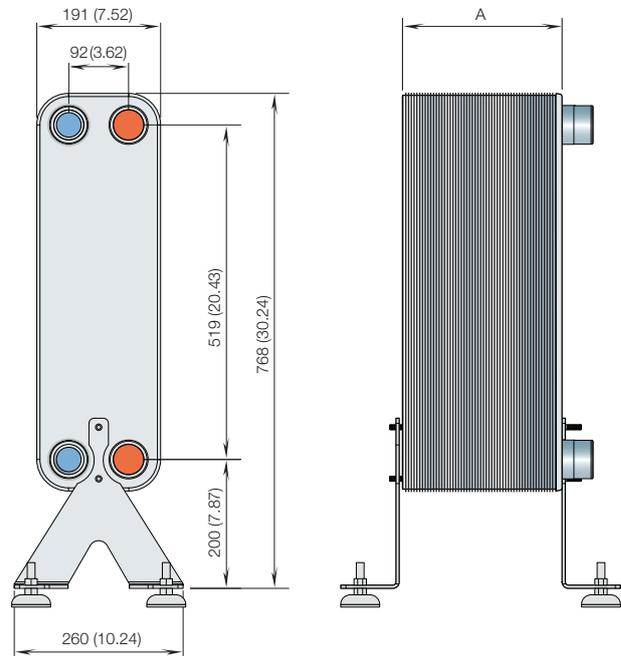
* Water at 5 m/s (16.4 ft/s) (connection velocity)

Standard materials

Cover plates	Stainless steel
Connections	Stainless steel
Plates	Stainless steel
Brazing filler	Copper

Standard dimensions

mm (inch)



CALOR SRL

Str. Progresului nr. 30-40, sector 5, Bucuresti

tel: 021.411.44.44, fax: 021.411.36.14

www.calorserv.ro - www.calor.ro