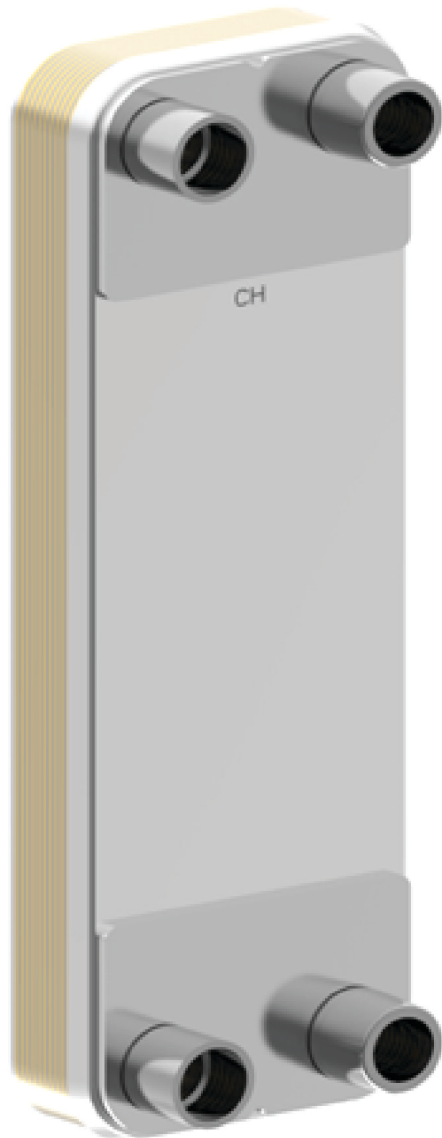


## Data Sheet

# MicroPlate™ HeatExchanger Type **H48T-CH**

Brazed plate heat exchanger dedicated for transcritical CO<sub>2</sub> systems



Introducing H48T-CH, our new brazed plate heat exchanger featuring the patented Micro Plate™ design dedicated for 140 bar transcritical CO<sub>2</sub> systems.

H48T-CH is optimized for commercial refrigeration (e.g. food retail, transport refrigeration, heat recovery) and heat pump with capacity up to 150kW. Having a secondary side pressure at 90bar, it is also an excellent choice to run as suction gas heat exchanger.

With the unique Micro Plate™ technology, the H48T-CH heat exchanger pushes the boundaries of thermal performance and makes it an unmatched and reliable heat exchanger in a CO<sub>2</sub> system.

A lightweight and compact design without a reinforced frame ensures easy installation and allows for more compact CO<sub>2</sub> systems.

## Features

- High design pressure: enables reliable choice for transcritical CO<sub>2</sub> applications
- Proven reliability: enables longer lifetime and less failure rate
- High heat transfer efficiency: enables high-efficient CO<sub>2</sub> unit
- Small footprint: enables more compact CO<sub>2</sub> systems and reduced CO<sub>2</sub> emission

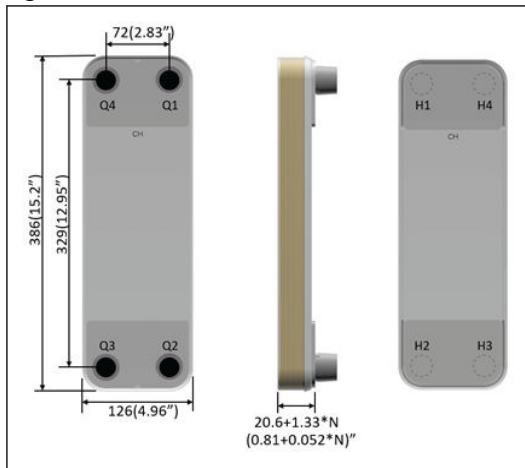
## Portfolio overview

- **H48T-CH**
  - Gas Cooler/Condenser
  - Subcooler/Superheater
  - Economizer

## Product specification

### Dimensions

Figure 1: Dimensions



### Operating conditions

- Max number of plates: 150
- Pressure and temperature data:
  - Min. working temperature: -196 °C (-320 °F)
  - Max. working temperature: 200 °C (390 °F)
  - Max. working pressure: 140 bar (2030psi) for primary side and 90 bar (1305 psi) for secondary side

### Weight

- $3.9 + 0.182 \times N$  [kg] /  $8.6 + 0.40 \times N$  [lb]
- N: Number of Plate

### Material specification

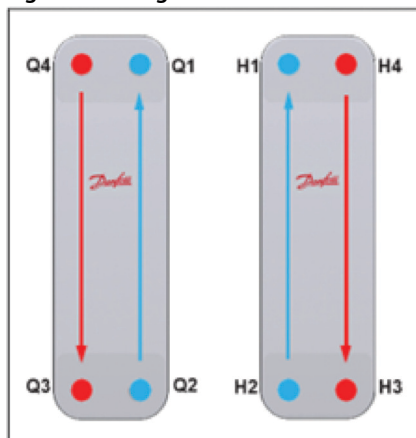
Table 1: Material specification

Item	Material	Specification
Cover plates	Stainless steel	AISI 304L
Reinforce plates		
Plates	Stainless steel	AISI 316L
Connections	Stainless steel	AISI 304L
Brazing filler	Pure copper	T2

Other material combinations are available on request. Please contact your Danfoss sales representative for more information.

## Configuration flow

Figure 2: Configuration flow



Parallel flow:

Q1 - Q2 [H1 - H2]: Secondary side

Q3 - Q4 [H3 - H4]: Primary side

## Hold up volume

Q1 - Q2:  $0.039 \times N/2$  (L) /  $0.0103 \times N/2$  (gal)

Q3 - Q4:  $0.039 \times (N-2)/2$  (L) /  $0.0103 \times (N-2)/2$  (gal)

N: Number of Plate

## Ordering

Global or local standard code numbers can be accessed via [Store.Danfoss.com](https://Store.Danfoss.com) on local subsites, with full set of technical data as well as relevant assets such as documentation and drawings.

## Configuring and calculating products

The H48T-CH can be easily customized based on the application needs; model size can be evaluated using Hexselector software. For details, product configuration and code creation please contact your Danfoss Sales representative.

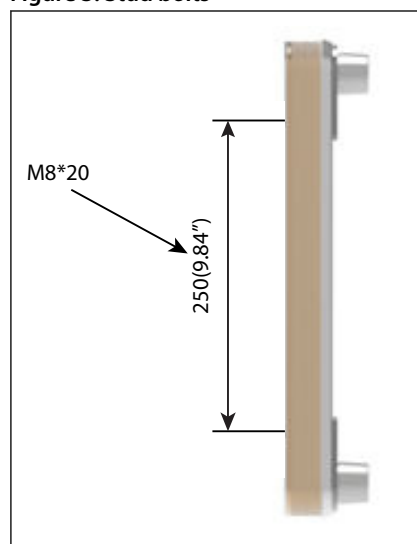
## Mechanical connections

Table 2: Mechanical connections

Circuits	Connection type options	Connection size option (in.)
Q1 - Q2 (secondary side)	BSPP G male	1/2, 3/4, 1
	BSPP G female	1/2, 3/4
	BSPT R male	1/2, 3/4, 1
	BSPP R female	1/2, 3/4
	NPT Male	1/2, 3/4, 1
	NPT Female	1/2, 3/4
	Welding	1/2, 3/4, 1 (thread size)
	Victaulic	3/4, 1
Q3 (primary side)	Soldering	3/4, 1/2, 5/8, 3/4, 7/8, 1, 1-1/8
Q4 (primary side)	Soldering	1/4, 3/8, 1/2, 7/8, 1, 1-1/8
	Soldering	3/8, 1/2, 5/8, 3/4, 7/8, 1, 1-1/8

## Accessories and spare parts

Figure 3: Stud bolts



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

Table 3: Stud bolts

Stud bolt position	Bolt sizes
250 mm, middle	M8x20

Contact your Danfoss sales representative for further information.

## Affected products

Table 4: Affected products

SAP Code	Drawing	Product	Q1/Q2	Q3/Q4	Bolts
111B7531	T24001-1781	H48T-CH-10	G1 Thread/Solder inside	Solder 7/8	M8*25
111B7532	T24001-1782	H48T-CH-16	G1 Thread/Solder inside	Solder 7/8	M8*25
111B7533	T24001-1783	H48T-CH-20	G1 Thread/Solder inside	Solder 7/8	M8*25
111B7534	T24001-1784	H48T-CH-26	G1 Thread/Solder inside	Solder 7/8	M8*25
111B7535	T24001-1785	H48T-CH-30	G1 Thread/Solder inside	Solder 7/8	M8*25
111B8004	T24001-1786	H48T-CH-40	G1 Thread/Solder inside	Solder 7/8	M8*25
111B7537	T24001-1787	H48T-CH-50	G1 Thread/Solder inside	Solder 7/8	M8*25
111B7538	T24001-1788	H48T-CH-60	G1 Thread/Solder inside	Solder 7/8	M8*25
111B7539	T24001-1789	H48T-CH-70	G1 Thread/Solder inside	Solder 1-1/8	M8*25
111B7540	T24001-1790	H48T-CH-80	G1 Thread/Solder inside	Solder 1-1/8	M8*25
111B7541	T24001-1791	H48T-CH-90	G1 Thread/Solder inside	Solder 1-1/8	M8*25
111B7542	T24001-1792	H48T-CH-100	G1 Thread/Solder inside	Solder 1-1/8	M8*25
111B7543	T24001-1793	H48T-CH-120	G1 Thread/Solder inside	Solder 1-1/8	M8*25
111B7544	T24001-1794	H48T-CH-140	G1 Thread/Solder inside	Solder 1-1/8	M8*25

Table 5: Affected products

SAP code	Drawing	Product	Q1/Q2	H3/H4	Bolts
111B7560	T24001-1796	H48T-CH-26	G1 Thread/Solder inside	Solder 7/8	M8*25
111B7561	T24001-1797	H48T-CH-30	G1 Thread/Solder inside	Solder 7/8	M8*25
111B7562	T24001-1798	H48T-CH-40	G1 Thread/Solder inside	Solder 7/8	M8*25
111B7563	T24001-1799	H48T-CH-50	G1 Thread/Solder inside	Solder 7/8	M8*25
111B7564	T24001-1800	H48T-CH-60	G1 Thread/Solder inside	Solder 7/8	M8*25
111B7565	T24001-1801	H48T-CH-70	G1 Thread/Solder inside	Solder 1-1/8	M8*25
111B7566	T24001-1802	H48T-CH-80	G1 Thread/Solder inside	Solder 1-1/8	M8*25
111B7567	T24001-1803	H48T-CH-90	G1 Thread/Solder inside	Solder 1-1/8	M8*25
111B7568	T24001-1804	H48T-CH-100	G1 Thread/Solder inside	Solder 1-1/8	M8*25
111B7569	T24001-1805	H48T-CH-120	G1 Thread/Solder inside	Solder 1-1/8	M8*25
111B7570	T24001-1806	H48T-CH-140	G1 Thread/Solder inside	Solder 1-1/8	M8*25

## Certificates, declarations, and approvals

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

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

### **Third party approvals**

All MPHE and BPHE are certified to European Pressure Equipment Directive (PED) and are approved by Underwriters Laboratories (UL).

Other certifications are available upon request: KRAIA, EAC, UA, AS; for others and more details please contact your local Danfoss representative.



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