

TO: **BLRB Architects**  
**404 SW Columbia St**  
**Bend, OR 97702**

**PROJECT NAME: Pilot Butte Middle School Renovation – Buildings A, E & F**

We hereby submit for consideration, the following product instead of specified item for above project:

Section: 23 57 00 Paragraph: 2.2.A

Specified Item Heat Exchangers

Proposed Substitution: Taco model TB plate and frame water to water heat exchanger

Attach complete dimensional information and technical data including laboratory tests, if applicable.

Include complete information on changes to Drawings and/or specifications, which proposed substitution will require for its proper installation.

Submit with request all necessary samples and substantiating data to provide equal quality, performance, and appearance to that which is specified. Clearly mark manufacturer's literature to indicate equality in performance. Differences in quality of materials and construction shall be indicated.

The undersigned states that the following paragraphs, unless modified on attachments, are correct:

1. The proposed substitutions do not affect dimensions shown on drawings.
2. The undersigned will pay for changes to the building design, including engineering design, detailing and construction costs caused by the requested substitution.
3. The proposed substitution will have no adverse affect on other trades, the construction schedule, or specified warranty requirements.
4. Maintenance and service parts will be locally available for the proposed substitution.
5. The proposed substitution will have no affect on applicable codes.
6. The manufacturer's guarantee or warranties of proposed product is equivalent to; or exceeds that of the specified product.
7. Proposed substituted item will match all sizes, profiles, specifications and colors of item originally specified.

List of names and location of three similar projects on which product was used, date of installation, and Architect's name and phone number.

Project No. 1: \_\_\_\_\_

Project No. 2: \_\_\_\_\_

Project No. 3: \_\_\_\_\_



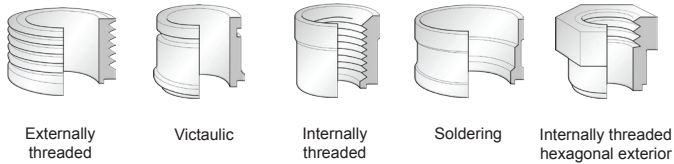
### TB10T Brazed Plate Heat Exchanger

The TB10T delivers efficient heat exchange solutions across a wide capacity interval, and is quick and simple to adapt for a number of applications. The product's compact size, versatility, and excellent heat transfer make it a perfect choice for both single-phase and refrigerant applications.



# TB10T Heat Exchanger

## Available connections\*

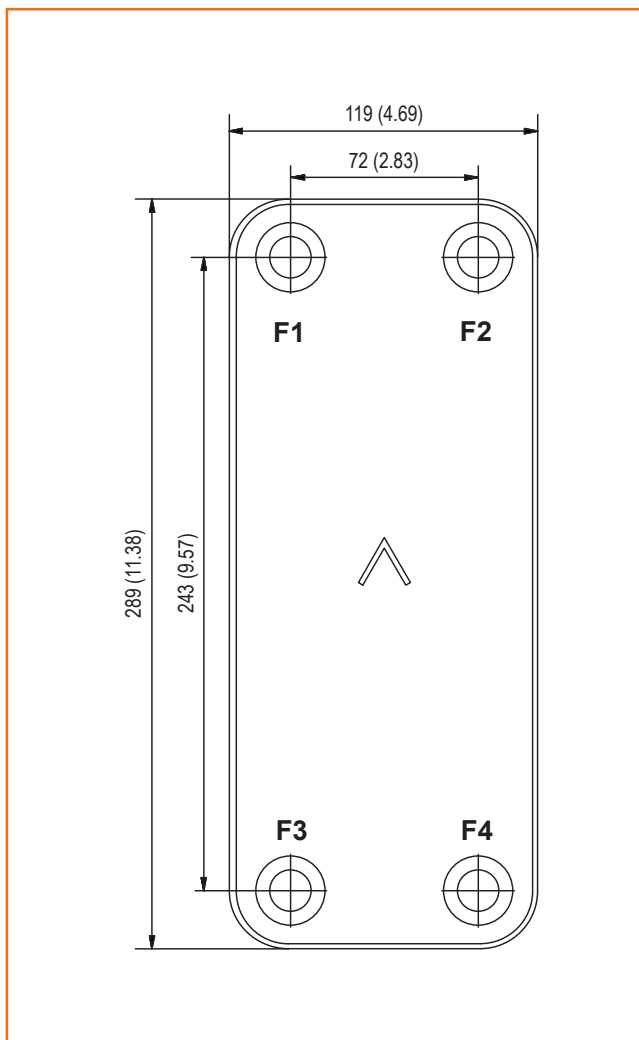


\*For specific dimensions, or information about other types of connections, please contact your Taco sales representative.

## Pressure classes

- S** Standard, evaluated per EN 13345 (25-38 bar/ 363-550 PSI).
- M** Medium, evaluated per EN 13345 (38-48 bar/550-696 PSI).
- H** High, evaluated per EN 13345 (42-56 bar/609-812 PSI).

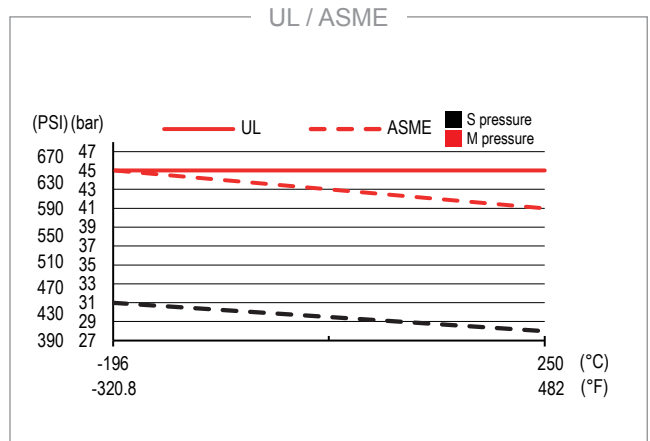
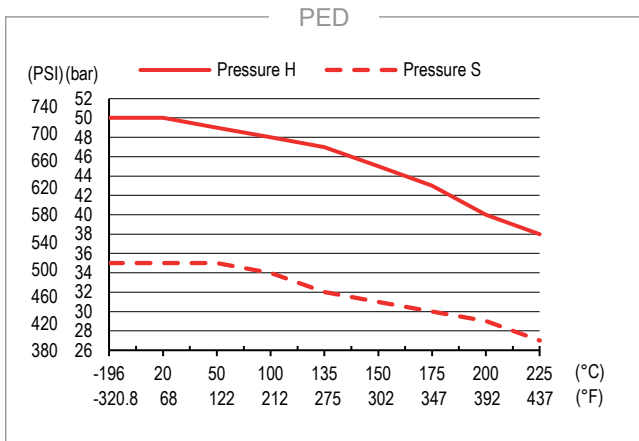
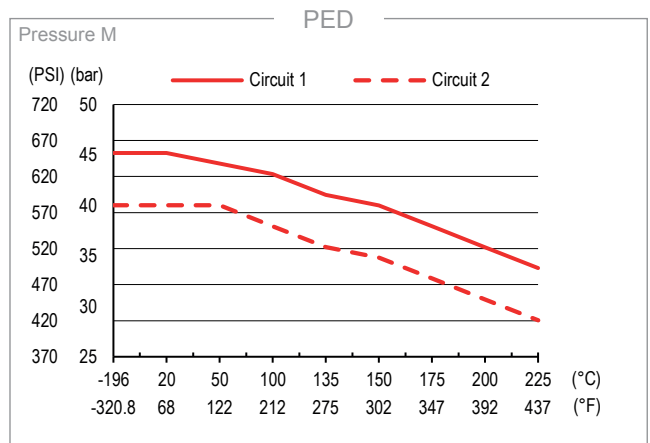
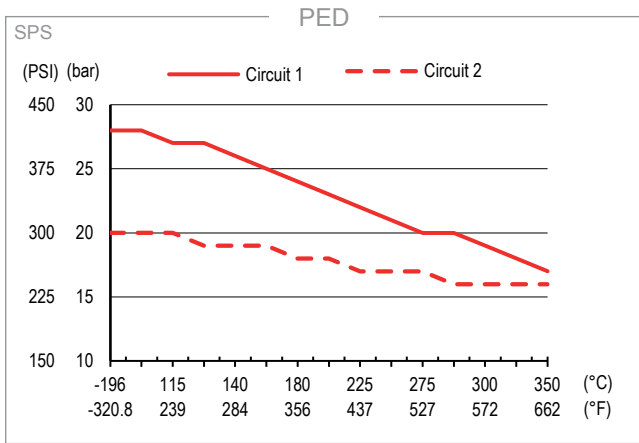
Max number of plates (NoP)	140
Port size F1/P1	24 mm (0.945 in)
Port size F2/P2	24 mm (0.945 in)
Port size F3/P3	24 mm (0.945 in)
Port size F4/P4	24 mm (0.945 in)
Max volume flow	9 m <sup>3</sup> /h (39.6 gpm)



Materials	Channel plate	Brazing
SC	Stainless steel	Copper
NC	Stainless steel	Copper
SN	Stainless steel	Nickel
SPS	Stainless steel	Stainless steel
SPF	Stainless steel	Stainless steel

Size	Height of plate pack	Total weight
SC M SC S NC S	4+(2,24×NoP) mm	1,15+(0,096×NoP) kg
	0.157+(0,088×NoP) in	2.54+(0.212×NoP) lb
SC H	8+(2,24×NoP) mm	2,1+(0,096×NoP) kg
	0.315+(0.088×NoP) in	4.63+(0.212×NoP) lb
SPF S	4+(2,27×NoP) mm	1,16+(0,086×NoP) kg
	0.157+(0.089×NoP) in	2.55+(0.189×NoP) lb
SPS M	4+(2,24×NoP) mm	1,24+(0,096×NoP) kg
	0.157+(0.088×NoP) in	2.73+(0.212×NoP) lb
SN S	4+(2,27×NoP) mm	1,17+(0,086×NoP) k
	0.157+(0.089×NoP) in	2.59+(0.212×NoP) lb

# TB10T Performance Curves



### Third party approvals

Taco BPHEs are generally approved by listed certification organizations:

**Europe, Pressure Equipment Directive (PED)**

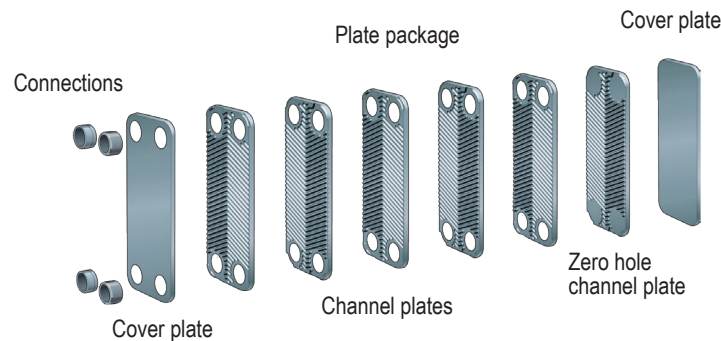
**America, Underwriters Laboratories Inc (UL)**

**Japan, Kouatsu-Gas Hoan Kyoukai (KHK)**

Additionally Taco holds approvals from a vast variety of other certification organizations. For approval information regarding a specific product please contact your local Taco representative. Taco reserves the right to make changes without prior notice.

### The BPHE concept

The Brazed Plate Heat Exchanger (BPHE) is constructed as a plate package of corrugated channel plates with a filler material between each plate. During the vacuum brazing process, the filler material forms a brazed joint at every contact point between the plates, creating complex channels. The BPHE allows media at different temperatures to come into close proximity, separated only by channel plates that enable heat from one media to be transferred to the other with very high efficiency. The concept is similar to other plate and frame technology, but without the gaskets and frame parts.



### Calculation Software

With Taco's unique Software Package, you can do advanced heat transfer calculations yourself, and choose the product solution that suits your application best. It's also easy to choose connections and generate drawings of the complete product. If you would like advice, or you would like to discuss different product solutions, Taco offers all the service and support your need.

### Material disclaimer

The information and recommendations in regards to the products are presented in good faith, however, Taco makes no representations or warranties as to the completeness or accuracy of the information. Information is supplied upon the condition that the purchasers will make their own determination as to the products' suitability for their purposes prior to use. Purchasers should note that the properties of the products are both application and material selection dependent and that products containing stainless steel are still subject to corrosion if used in unsuitable environments.

