

TECHNICAL SHEET  
T PLATE B I

*I series-impact resistant brazed  
plate heat exchanger*



## All the machines are EEC directive compliant

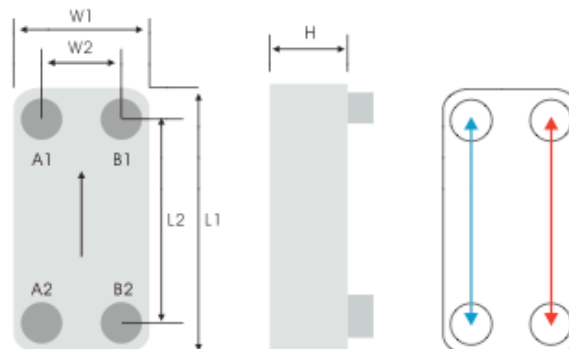
I series is suitable for those applications with the possibilities of encountering thermal shocks or pressure shocks.



BRAZING MATERIAL	COPPER			
Model	TCBI300	TCBI900	TCBI1700	TCBI2500
	(A1,A2/B1,B2)			
Max. Working Pressure (bar)	30/30	30/30	30/30	30/30
Min. Test Pressure (bar)	43/43	43/43	43/43	43/43
Max. Working Temperature (°C)	200			

MODEL	L1	L2	W1	W2	H THICKNESS	WEIGHT*	HEAT TRANSFER AREA/ PLATE	TOTAL HEAT TRANSFER AREA	VOLUME/ CHANNEL	TOTAL VOLUME
	(mm)	(mm)	(mm)	(mm)	(mm)	*(kg) (Without Connection)	(m <sup>2</sup> )	(m <sup>2</sup> )	(liter)	(liter)
TCBI300	194	154	80	40	10.0+2.25*N	0.90+0.047*N	0.0117	(N-6)*0.0117	0.025	(N-5)*0.025
TCBI900	304	250	124	70	10.0+2.40*N	1.96+0.131*N	0.0300	(N-6)*0.0300	0.065	(N-5)*0.065
TCBI1700	504	444	124	64	10.0+2.40*N	4.06+0.237*N	0.0533	(N-6)*0.0533	0.107	(N-5)*0.107
TCBI2500	528	456	246	174	11.5+2.40*N	8.12+0.438*N	0.1099	(N-6)*0.1099	0.232	(N-5)*0.232

N: number of plates



## Standard connections

MODEL	THREADED CONNECTIONS																SOLDER CONNECTIONS										HEIGHT (mm)	
	PT/NPT/GB MALE								PT/NPT/GB FEMALE								Ø 6.6 mm	Ø 9.73 mm	Ø 12.9 mm	Ø 16.15 mm	Ø 19.25 mm	Ø 22.36 mm	Ø 25.6 mm	Ø 28.8 mm	Ø 35.25 mm	Ø 41.5 mm		Ø 54.3 mm
	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"	2 1/2"	3"	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"	2 1/2"	1/4"	3/8"	1/2"	5/8"	6/8"	7/8"	1"	1 1/8"	1 3/8"	1 5/8"	2 1/8"		
100	.								.						.	.	.	.	.								20	
300	.	.							.	.					.	.	.	.	.	.							20	
500	.	.							.	.					.	.	.	.	.	.							20	
800	.	.	.						.	.	.				.	.	.	.	.	.	.	.					27	
900	.	.	.	.	.				.	.	.				.	.	.	.	.	.	.	.	.	.	.	.	27	
1500	.	.	.						.	.	.				.	.	.	.	.	.	.	.	.	.	.	.	27	
1700	.	.	.	.	.				.	.	.	.			.	.	.	.	.	.	.	.	.	.	.	.	27	
2100			.	.	.	.	.		.	.	.	.			.	.	.	.	.	.	.	.	.	.	.	.	27/42/54	
2500			.	.	.	.	.		.	.	.	.			.	.	.	.	.	.	.	.	.	.	.	.	27/42/54	
2700					.	.	.	.	.	.	.	.			.	.	.	.	.	.	.	.	.	.	.	.	27/42	
2600					.	.	.	.	.	.	.	.			.	.	.	.	.	.	.	.	.	.	.	.	27/42/54	

· Flange, SAE Connections are available

### 1 Installation and Mounting Advice

1. The brazed plate heat exchanger should be installed vertically as the instruction mark shown on the label (↑) demonstration as below:

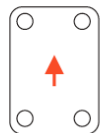


Fig. 1 Installation of the brazed plate heat exchanger

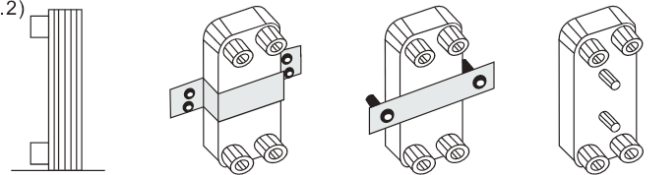


Improper Installation Position

2. Recommended installation position (Fig. 2)

- Bottom Support
- Sheet Metal Bracket
- Crossbar & Bolts
- Stud Bolts

\* Vibration dampener or other absorbing devices are also recommended.



a. Bottom Support b. Sheet Metal Bracket c. Crossbar & Bolts d. Stud Bolts

Fig. 2 Recommended Installation Position

### 2 Softening Treatment of Cooling Tower Water

Softening treatment and regular maintenance for cooling tower can reduce the scale clogging problem. While using chemical additives to do the cleaning, the concentration of the additive should be carefully controlled. Avoid using corrosive additives. If stainless steel and copper react to the corrosive content, it will reduce the pressure resistance on the brazing joints and possibly lead to internal or external leakages. To avoid the problem mentioned above, please refer to the below data for proper chemical additives:

pH: 6~8                       $\text{SO}_4^{2-} < 30\text{mg/L}$   
 $\text{Cl}^- < 50\text{ppm} (< 100^\circ\text{C})$        $\text{NH}_4^+ < 0.1\text{mg/L}$

## Application fields



### 3 Prevention of Water Hammer

Water hammer occurs when the pipes carry incompressible fluids and the flow suddenly changes its velocity. The most common case occurs when one rapidly closes the solenoid valve and thus, causes instant pressure in the pipes. This will damage the valve, heat exchanger and other equipment. In order to avoid the problem mentioned above, installation of pressure suction pipe, water hammer arrestor, air chamber...etc is highly recommended.

### 4 Cleaning

To clean the brazed plate heat exchanger, it is recommended to use weak acid (5% phosphoric acid, nitric or oxalic acid...etc.) back flushing to remove soft debris inside. (as Fig. 3). The flow rate of the cleaning solution should be at least 1.5-2 times of the normal flow rate and the duration should be 30 minutes. After cleaning, the heat exchanger should be rinsed carefully with large amounts of clean water to purge any remaining acid solution before re-starting the system.

