

“TFP & TMP Series” Braze Plate Heat Exchangers



WATER CIRCULATION, FLOW CONTROL, AIR ELIMINATION, FLOW MEASUREMENT/BALANCING, TANKS

Do it once.
Do it right.



TACO . . . "TFP & TMP SERIES" BRAZED PLATE HEAT EXCHANGERS

Connected to Boiler; 180°F Supply, 150°F Return

Model	Radiant Floor 80°F return, 100°F supply			Radiant Floor 100°F return, 120°F supply			Radiant Floor 120°F return, 140°F supply		
	BTUH	Side A Boiler	Side B Radiant Floor GPM	BTUH	Side A Boiler	Side B Radiant Floor GPM	BTUH	Side A Boiler	Side B Radiant Floor GPM
TFP5x12-4 (3/4" MPT)	24,000	1.6	2.4	21,000	1.4	2.1	15,000	1.0	1.5
TFP5x12-6 (3/4" MPT)	32,000	2.1	3.2	28,000	1.9	2.8	20,000	1.3	2.0
TFP5x12-6 (3/4" MPT)	48,000	3.2	4.8	42,000	2.8	4.2	30,000	2.0	3.0
TFP5x12-8 (3/4" MPT)	64,000	4.3	6.4	56,000	3.7	5.6	40,000	2.7	4.0
TFP5x12-10 (3/4" MPT)	80,000	5.3	8.0	70,000	4.7	7.0	50,000	3.3	5.0
TFP5x12-10 (3/4" MPT)	96,000	6.4	9.6	84,000	5.6	8.4	60,000	4.0	6.0
TFP5x12-12 (3/4" MPT)	112,000	7.5	11.2	98,000	6.5	9.8	70,000	4.7	7.0
TFP5x12-12 (3/4" MPT)	128,000	8.5	12.8	112,000	7.5	11.2	80,000	5.3	8.0
TFP5x12-14 (3/4" MPT)	144,000	9.6	14.4	126,000	8.4	12.6	90,000	6.0	9.0
TFP5x12-14 (3/4" MPT)	160,000	10.7	16.0	140,000	9.3	14.0	100,000	6.7	10.0
TFP5x12-20 (1" MPT)	200,000	13.3	20.0	175,000	11.7	17.5	125,000	8.3	12.5
TFP5x12-24 (1" MPT)	240,000	16.0	24.0	210,000	14.0	21.0	150,000	10.0	15.0
TFP5x12-30 (1" MPT)	280,000	18.7	28.0	245,000	16.3	24.5	175,000	11.7	17.5
TFP5x12-30 (1 1/4" MPT)	320,000	21.3	32.0	280,000	18.7	28.0	200,000	13.3	20.0
TFP5x12-36 (1" MPT)	400,000	26.7	40.0	350,000	23.3	35.0	250,000	16.7	25.0
TFP5x12-40 (1 1/4" MPT)*	440,000	29.3	44.0	385,000	25.7	38.5	275,000	18.3	27.5
TFP5x12-50 (1 1/4" MPT)*	480,000	32.0	48.0	420,000	28.0	42.0	300,000	20.0	30.0
TFP5x12-50 (1 1/4" MPT)*	560,000	37.3	56.0	490,000	32.7	49.0	350,000	23.3	35.0
TFP5x12-60 (1 1/4" MPT)*	640,000	42.7	64.0	560,000	37.3	56.0	400,000	26.7	40.0
TFP5x12-70 (1 1/4" MPT)*	720,000	48.0	72.0	630,000	42.0	63.0	450,000	30.0	45.0
TFP5x12-80 (1 1/4" MPT)*	800,000	53.3	80.0	700,000	46.7	70.0	500,000	33.3	50.0
TFP10x20-20 (1 1/2" MPT)	640,000	42.7	64.0	560,000	37.3	56.0	400,000	26.7	40.0
TFP10x20-24 (1 1/2" MPT)	800,000	53.3	80.0	700,000	46.7	70.0	500,000	33.3	50.0
TFP10x20-30 (1 1/2" MPT)	960,000	64.0	96.0	840,000	56.0	84.0	600,000	40.0	60.0
TFP10x20-36 (1 1/2" MPT)	1120,000	74.7	112.0	980,000	65.3	98.0	700,000	46.7	70.0
TFP10x20-40 (1 1/2" MPT)	1280,000	85.3	128.0	1120,000	74.7	112.0	800,000	53.3	80.0
TFP10x20-50 (2" MPT)	1600,000	106.7	160.0	1400,000	93.3	140.0	1000,000	66.7	100.0
TFP10x20-60 (2" MPT)	1920,000	128.0	192.0	1680,000	112.0	168.0	1200,000	80.0	120.0

RADIANT FLOOR

* Models stocked in 1" MPT. 1 1/4" available on special order.

TFP Specifications

Plate Material:	316L Stainless Steel
Braze Material:	Copper
Maximum Working Temperature:	350°F
Minimum Working Temperature:	-425°F
Maximum Working Pressure:	450 psi

Approvals

U.L. (Underwriters Laboratory) USA and Canada-Standard
 ASME Certification (optional)
 Canadian CRN
 European TÜV



The Taco TFP Series is designed specifically for Domestic Hot Water applications, In-Floor Radiant Heating, Snow-Melt applications, and as a general alternative to Shell & Tube type heat exchangers. The TFP Series is rugged and reliable, yet very compact, representing the latest technology in high-performance heat exchangers. Copper brazed, stainless steel plates offer a highly efficient, low fouling transfer surface. All Taco TFP Series units have male pipe thread fittings, and mounting stud bolts are standard.



DO IT ONCE. DO IT RIGHT.

DOMESTIC HOT WATER

For Domestic Water Applications 50°F In - 140°F Out
Connected to Boiler; 200°F Supply, 150°F Return

Model	BTUH	Side A Boiler		Side B Water Heater	
		GPM	PD (psi)	GPM	PD (psi)
TFP5x12-4 (3/4" MPT)	20,000	0.8	2.1	1.0	0.8
TFP5x12-4 (3/4" MPT)	30,000	1.2	4.5	1.5	1.8
TFP5x12-6 (3/4" MPT)	40,000	1.6	2.1	2.0	1.4
TFP5x12-6 (3/4" MPT)	50,000	2.0	3.2	2.5	2.2
TFP5x12-6 (3/4" MPT)	60,000	2.4	4.6	1.3	0.6
TFP5x12-8 (3/4" MPT)	70,000	2.9	2.8	1.5	0.5
TFP5x12-8 (3/4" MPT)	80,000	3.3	3.6	1.8	0.6
TFP5x12-8 (3/4" MPT)	90,000	3.7	4.6	2.0	0.8
TFP5x12-10 (3/4" MPT)	100,000	4.1	3.2	2.2	0.6
TFP5x12-10 (3/4" MPT)	125,000	5.1	4.9	2.8	1.0
TFP5x12-12 (3/4" MPT)	150,000	6.2	4.6	3.3	1.0
TFP5x12-14 (3/4" MPT)	175,000	7.2	4.4	3.9	1.0
TFP5x12-16 (3/4" MPT)	200,000	8.2	4.2	4.5	1.0
TFP5x12-16 (3/4" MPT)	250,000	10.3	6.4	5.6	1.5
TFP5x12-20 (1" MPT)	300,000	12.4	5.7	6.7	1.4
TFP5x12-24 (1" MPT)	350,000	14.5	5.2	7.8	1.4
TFP5x12-24 (1" MPT)	400,000	16.5	6.8	9.0	1.8
TFP5x12-30 (1" MPT)	450,000	18.6	5.4	10.1	1.5
TFP5x12-30 (1" MPT)	500,000	20.7	6.6	11.2	1.8

Model	BTUH	Side A Boiler		Side B Water Heater	
		GPM	PD (psi)	GPM	PD (psi)
TFP5x12-30 (1 1/4" MPT)*	600,000	24.8	9.4	13.5	2.6
TFP5x12-36 (1 1/4" MPT)*	700,000	29.0	8.9	15.7	2.5
TFP5x12-40 (1 1/4" MPT)*	800,000	33.1	9.4	18.0	2.7
TFP5x12-50 (1 1/4" MPT)*	900,000	37.2	7.9	20.3	2.3
TFP5x12-50 (1 1/4" MPT)*	1,000,000	41.4	9.7	22.5	2.8
TFP5x12-70 (1 1/4" MPT)*	1,250,000	51.7	8.5	28.2	2.5
TFP10x20-20 (1 1/2" MPT)	500,000	20.7	6.3	11.2	1.6
TFP10x20-20 (1 1/2" MPT)	600,000	24.8	8.9	13.5	2.2
TFP10x20-24 (1 1/2" MPT)	700,000	29.0	8.2	15.7	2.1
TFP10x20-30 (1 1/2" MPT)	800,000	33.1	6.7	18.0	1.8
TFP10x20-30 (1 1/2" MPT)	900,000	37.2	8.4	20.3	2.3
TFP10x20-36 (1 1/2" MPT)	1,000,000	41.4	7.1	22.5	2.0
TFP10x20-40 (1 1/2" MPT)	1,250,000	51.7	8.8	28.2	2.5
TFP10x20-50 (2" MPT)	1,500,000	62.1	8.1	33.8	2.3
TFP10x20-60 (2" MPT)	1,750,000	72.5	7.7	39.4	2.2
TFP10x20-60 (2" MPT)	2,000,000	82.8	9.9	45.1	2.9
TFP10x20-70 (2" MPT)	2,250,000	93.2	9.4	50.7	2.7
TFP10x20-80 (2" MPT)	2,500,000	103.5	9.0	56.4	2.7

Larger models available. Consult your local Taco representative.

For 180°F Boiler Water, multiply product model by 1.1 to select larger required model. (i.e., TFP5x12-14 at 200°F, use TFP5x12-16 at 180°F).

For Steam, 4 psi - 100 psi, use the above chart and substitute TMP Series model numbers for Steam Compatibility. For > 100 psig to 300 psig steam use TMPN Series.

For Snow Melt Application 100°F In - 130°F Out (40% P.G.)
Connected to Boiler; 180°F Supply, 150°F Return

Model	BTUH	Side A Boiler		Side B Snow Melt Circuit	
		GPM	PD (psi)	GPM	PD (psi)
TFP5x12-6 (3/4" MPT)	20,000	1.3	1.0	1.3	0.7
TFP5x12-6 (3/4" MPT)	30,000	2.0	2.1	2.1	1.4
TFP5x12-8 (3/4" MPT)	40,000	2.7	1.7	2.8	1.4
TFP5x12-8 (3/4" MPT)	50,000	3.4	2.5	3.6	2.1
TFP5x12-10 (3/4" MPT)	60,000	4.1	2.1	4.3	1.9
TFP5x12-10 (3/4" MPT)	70,000	4.8	2.8	5.0	2.5
TFP5x12-12 (3/4" MPT)	80,000	5.5	2.4	5.7	2.3
TFP5x12-12 (3/4" MPT)	90,000	6.2	2.9	6.4	2.9
TFP5x12-14 (3/4" MPT)	100,000	6.8	2.6	7.2	2.7
TFP5x12-16 (3/4" MPT)	125,000	8.6	2.9	9.0	3.1
TFP5x12-20 (1" MPT)	150,000	10.3	2.6	10.8	2.9
TFP5x12-24 (1" MPT)	175,000	12.0	2.4	12.6	2.8
TFP5x12-24 (1" MPT)	200,000	13.7	3.1	14.4	3.6
TFP5x12-30 (1" MPT)	225,000	15.5	2.5	16.2	3.1
TFP5x12-36 (1" MPT)	250,000	17.2	2.2	18.0	2.7
TFP5x12-36 (1" MPT)	275,000	18.9	2.6	19.8	3.2
TFP5x12-40 (1 1/4" MPT)*	300,000	20.6	2.6	21.6	3.2
TFP5x12-50 (1 1/4" MPT)*	350,000	24.1	2.4	25.2	3.0
TFP5x12-50 (1 1/4" MPT)*	400,000	27.5	3.0	28.8	3.8
TFP5x12-60 (1 1/4" MPT)*	450,000	31.0	2.9	32.4	3.6
TFP5x12-70 (1 1/4" MPT)*	500,000	34.4	2.8	36.1	3.6
TFP10x20-30 (1 1/2" MPT)	400,000	27.5	3.1	28.8	3.7
TFP10x20-30 (1 1/2" MPT)	450,000	31.0	3.8	32.4	4.6
TFP10x20-36 (1 1/2" MPT)	500,000	32.8	3.0	35.6	3.9
TFP10x20-40 (1 1/2" MPT)	600,000	41.3	3.7	43.3	4.6
TFP10x20-50 (2" MPT)	700,000	48.2	3.3	50.5	4.2
TFP10x20-60 (2" MPT)	800,000	55.1	3.0	57.7	3.9
TFP10x20-60 (2" MPT)	900,000	62.0	3.8	64.9	4.8
TFP10x20-70 (2" MPT)	1,000,000	68.8	3.5	72.2	4.5

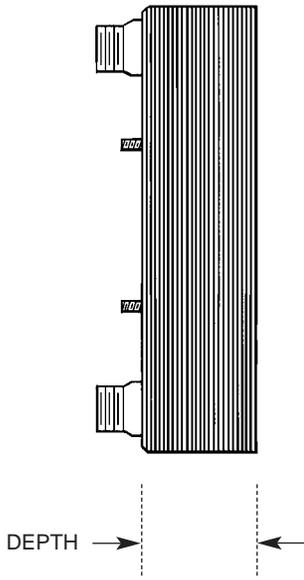
SNOW MELT

Larger models available. Contact your local Taco representative.

For 200°F Boiler Water, use the above chart. For 160°F Boiler Water, multiply model number by 1.66.

For Steam, use the above chart and substitute TMP Series model number.

DIMENSIONS & SPECIFICATIONS



Models	Plates	Width	Length	Depth	Connections		Net Wt. (lbs.)
					Hotside-A	Coldside-B	
TFP5x12-4	4	4.9	12.2	0.7	¾" MPT	¾" MPT	4.5
TFP5x12-6	6	4.9	12.2	0.9	¾" MPT	¾" MPT	5.1
TFP5x12-8	8	4.9	12.2	1.1	¾" MPT	¾" MPT	5.8
TFP5x12-10	10	4.9	12.2	1.3	¾" MPT	¾" MPT	6.4
TFP5x12-12	12	4.9	12.2	1.5	¾" MPT	¾" MPT	7.0
TFP5x12-14	14	4.9	12.2	1.7	¾" MPT	¾" MPT	7.7
TFP5x12-16	16	4.9	12.2	1.9	¾" MPT	¾" MPT	8.3
TFP5x12-20	20	4.9	12.2	2.2	1" MPT	1" MPT	9.6
TFP5x12-24	24	4.9	12.2	2.6	1" MPT	1" MPT	10.8
TFP5x12-30	30	4.9	12.2	3.2	1" MPT	1" MPT	12.7
TFP5x12-30 *	30	4.9	12.2	3.2	1¼" MPT*	1¼" MPT	12.7
TFP5x12-36 *	36	4.9	12.2	3.7	1" MPT*	1" MPT	14.6
TFP5x12-40 *	40	4.9	12.2	4.1	1" MPT*	1" MPT	15.9
TFP5x12-40 *	40	4.9	12.2	4.1	1¼" MPT*	1¼" MPT	15.9
TFP5x12-50 *	50	4.9	12.2	5.1	1" MPT*	1" MPT	19.0
TFP5x12-50 *	50	4.9	12.2	5.1	1¼" MPT*	1¼" MPT	19.0
TFP5x12-60	60	4.9	12.2	6.0	1¼" MPT	1¼" MPT	22.2
TFP5x12-70	70	4.9	12.2	6.9	1¼" MPT	1¼" MPT	25.3
TFP5x12-80	80	4.9	12.2	7.9	1¼" MPT	1¼" MPT	28.5
TFP10x20-20	20	9.8	20.3	2.2	1½" MPT	1½" MPT	33.0
TFP10x20-24	24	9.8	20.3	2.6	1½" MPT	1½" MPT	37.0
TFP10x20-30	30	9.8	20.3	3.2	1½" MPT	1½" MPT	44.0
TFP10x20-36	36	9.8	20.3	3.7	1½" MPT	1½" MPT	50.0
TFP10x20-40	40	9.8	20.3	4.1	1½" MPT	1½" MPT	55.0
TFP10x20-50	50	9.8	20.3	5.1	2" MPT	2" MPT	66.0
TFP10x20-60	60	9.8	20.3	6.0	2" MPT	2" MPT	77.0

* Models stocked in 1" MPT. 1¼" available on special order.

TMP Specifications

Plate Material:	Marine Stainless Alloy
Braze Material:	Nickel
Maximum Working Temperature:	350°F
Minimum Working Temperature:	-425°F
Maximum Working Pressure:	150 psi TMP Series, 300 psi TMPN Series

MARINE & SWIMMING POOL

Pool Capacity (Gallons)	1°F/Hr Heat Up Rate			2°F/Hr Heat Up Rate		
	Boiler Output Required (BTUH)	Boiler Side Minimum GPM	TACO Model	Boiler Output Required (BTUH)	Boiler Pump Minimum GPM	TACO Model
1,000	8,345	2	TMP5x12-4 (1" MPT)	16,690	2	TMP5x12-4 (1" MPT)
2,000	16,690	2	TMP5x12-4 (1" MPT)	33,380	2	TMP5x12-6 (1" MPT)
4,000	33,380	2	TMP5x12-6 (1" MPT)	66,760	4	TMP5x12-8 (1" MPT)
6,000	50,070	3	TMP5x12-6 (1" MPT)	100,140	7	TMP5x12-10 (1" MPT)
8,000	66,760	4	TMP5x12-8 (1" MPT)	133,520	9	TMP5x12-10 (1" MPT)
10,000	83,450	6	TMP5x12-8 (1" MPT)	166,900	11	TMP5x12-16 (1" MPT)
12,000	100,140	7	TMP5x12-10 (1" MPT)	200,280	13	TMP5x12-16 (1" MPT)
15,000	125,175	8	TMP5x12-10 (1" MPT)	250,350	17	TMP5x12-20 (1¼" MPT)
20,000	166,900	11	TMP5x12-16 (1" MPT)	333,800	22	TMP5x12-24 (1¼" MPT)
25,000	208,625	14	TMP5x12-16 (1" MPT)	417,250	28	TMP5x12-30 (1¼" MPT)
30,000	250,350	17	TMP5x12-20 (1¼" MPT)	500,700	33	TMP5x12-40 (1¼" MPT)
35,000	292,075	18	TMP5x12-20 (1¼" MPT)	584,150	36	TMP5x12-40 (1¼" MPT)
40,000	333,800	19	TMP5x12-24 (1¼" MPT)	667,600	38	TMP5x12-50 (1¼" MPT)
45,000	375,525	21	TMP5x12-30 (1¼" MPT)	751,050	43	TMP5x12-50 (1¼" MPT)
50,000	417,250	24	TMP5x12-30 (1¼" MPT)	834,500	48	TMP5x12-60 (1¼" MPT)
60,000	500,700	29	TMP5x12-40 (1¼" MPT)	1,001,400	57	TMP5x12-70 (1¼" MPT)
70,000	584,150	33	TMP5x12-40 (1¼" MPT)	1,168,300	67	TMP5x12-80 (1¼" MPT)
80,000	667,600	38	TMP5x12-50 (1¼" MPT)	1,335,200	76	TMP5x12-90 (1¼" MPT)
90,000	751,050	43	TMP5x12-50 (1¼" MPT)	1,502,100	86	TMP5x12-100 (1¼" MPT)
100,000	834,500	48	TMP5x12-60 (1¼" MPT)	1,669,000	95	TMP5x12-110 (1¼" MPT)
125,000	1,043,125	60	TMP5x12-70 (1¼" MPT)	2,086,250	119	(2) TMP5x12-70 (1¼" MPT)
150,000	1,251,750	72	TMP5x12-80 (1¼" MPT)	2,503,500	143	(2) TMP5x12-80 (1¼" MPT)
175,000	1,460,375	83	TMP5x12-100 (1¼" MPT)	2,920,750	167	(2) TMP5x12-100 (1¼" MPT)
200,000	1,669,000	95	TMP5x12-110 (1¼" MPT)	3,338,000	191	(2) TMP5x12-110 (1¼" MPT)

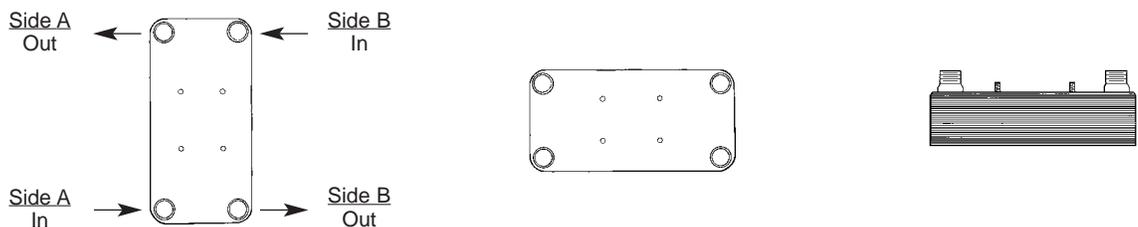
1. Typical Design Conditions: 180°F Boiler Water to HX, 80°F Pool Water.
2. For 160°F Boiler Water, multiply product model by 1.5 to select larger required model. (i.e., TFP5x12-16 at 180°F, use TFP5x12-24 at 160°F).
3. For 200°F Boiler Water and Steam, use model number shown for 180°F. Multiply minimum Boiler gpm by 0.60.
4. Bypass/Balancing valve on Pool side of HXREQUIRED to allow for full pool pump flow from 30 to 100 gpm or more.
5. Pool side Pressure drop for all models ranges for typical flow with bypass/balancing valve 4.0 psi or higher.
6. Boiler side Pressure drop for all models ranges 4.0 psi to 4.5 psi for the above Minimum Flow rates.



Taco's Brazed Plate product selection software supports sizing for Domestic Water, Snow Melt, Radiant Floor, Pool and Spa in addition to Fluid/Fluid Applications. This software is available from your local Taco Representative or may also be downloaded from our web site @ taco-hvac.com.

INSTALLATION

Heat Exchanger may be installed in a vertical or horizontal position, *pipied in counterflow*.



SPECIFICATION

General

A brazed plate heat exchanger shall be provided for the purpose of

- domestic hot water heating
- snow melt system heating
- radiant floor heating
- high pressure system isolation (300 to 450 psi)
- fluid cooling
- fluid heating

Acceptable supplier shall be TACO, Inc., Cranston, RI

Performance

The heat exchanger shall be rated as follows:

Side A:	Fluid or Steam:	_____	
	Entering Temp.:	_____	°F
	Leaving Temp.:	_____	°F
	Flow Rate:	_____	gpm or lbs./hr.
	Fouling Factor:	_____	BTU/sq. ft./°F
	Maximum Pressure Drop:	_____	°F
Side B:	Fluid:	_____	
	Entering Temp.:	_____	°F
	Leaving Temp.:	_____	°F
	Flow Rate:	_____	gpm or lbs./hr.
	Fouling Factor:	_____	BTU/sq. ft./°F
	Maximum Pressure Drop:	_____	°F

Design Working Pressure: 450 psi (Standard TFP models)
150 psi (TMP Marine models)
300 psi (TMPN models)

Heat Exchanger Model: _____

Construction

The heat exchanger shall be brazed plate construction, consisting of stainless steel plates, embossed with a specific heat transfer surface. Plate material shall be:

- 316L Stainless Steel
- Marine Stainless Alloy (for Steam, Sea Water and Ground Water)

The plates shall be vacuum brazed together with material compatible with application: Brazed material shall be:

- Copper (standard)
- Nickel Alloy (for all Marine models, Steam, Sea Water, Low pH Water, and Ground Water)

The heat exchanger shall be U.L. Listed (Underwriters Laboratory), or ASME Certified.

The heat exchanger shall have stud bolts for mounting.

The heat exchanger must be manufactured in the U.S.A.

Installation

Contractor must install fluid strainers on the inlet of each circuit to ensure proper protection of the heat exchanger. Strainer shall be 16 mesh or better.

Warranty

The supplier shall provide its standard product warranty and shall warrant the unit for 18 months from the date of manufacture, or one year from date of installation, whichever is longer.

Do it Once. Do it Right.

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