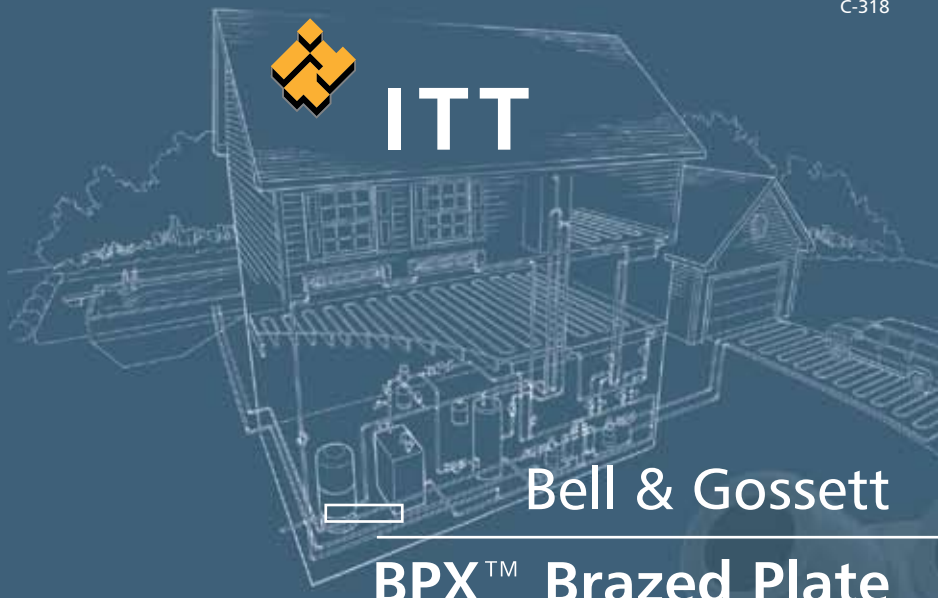
ITT

Engineered for life



ITT

Bell & Gossett

BPX™ Brazed Plate Heat Exchangers

For Residential Applications

- Radiant Floors
- Snow Melt
- Domestic Hot Water
- Pool Heating

USA
ITT Corporation
175 Standard Parkway
Cheektowaga, NY 14227
Phone: 800-447-7700
FAX: 716-862-4176
www.bellgossett.com

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Engineered for life

BPX Brazed Plate Heat Exchangers.

Smaller. Lighter. Stronger. More Efficient.

Bell & Gossett Brazed Plate Heat Exchangers are ideal for residential and light commercial hydronic systems because they provide maximum heat dissipation from a compact, lightweight heat exchanger. Unlike conventional shell and tube heat exchangers, our units can be used even in applications where space is at a premium. Their efficient design allows them to provide more heat transfer using less space, making them well suited to a variety of installations, including:

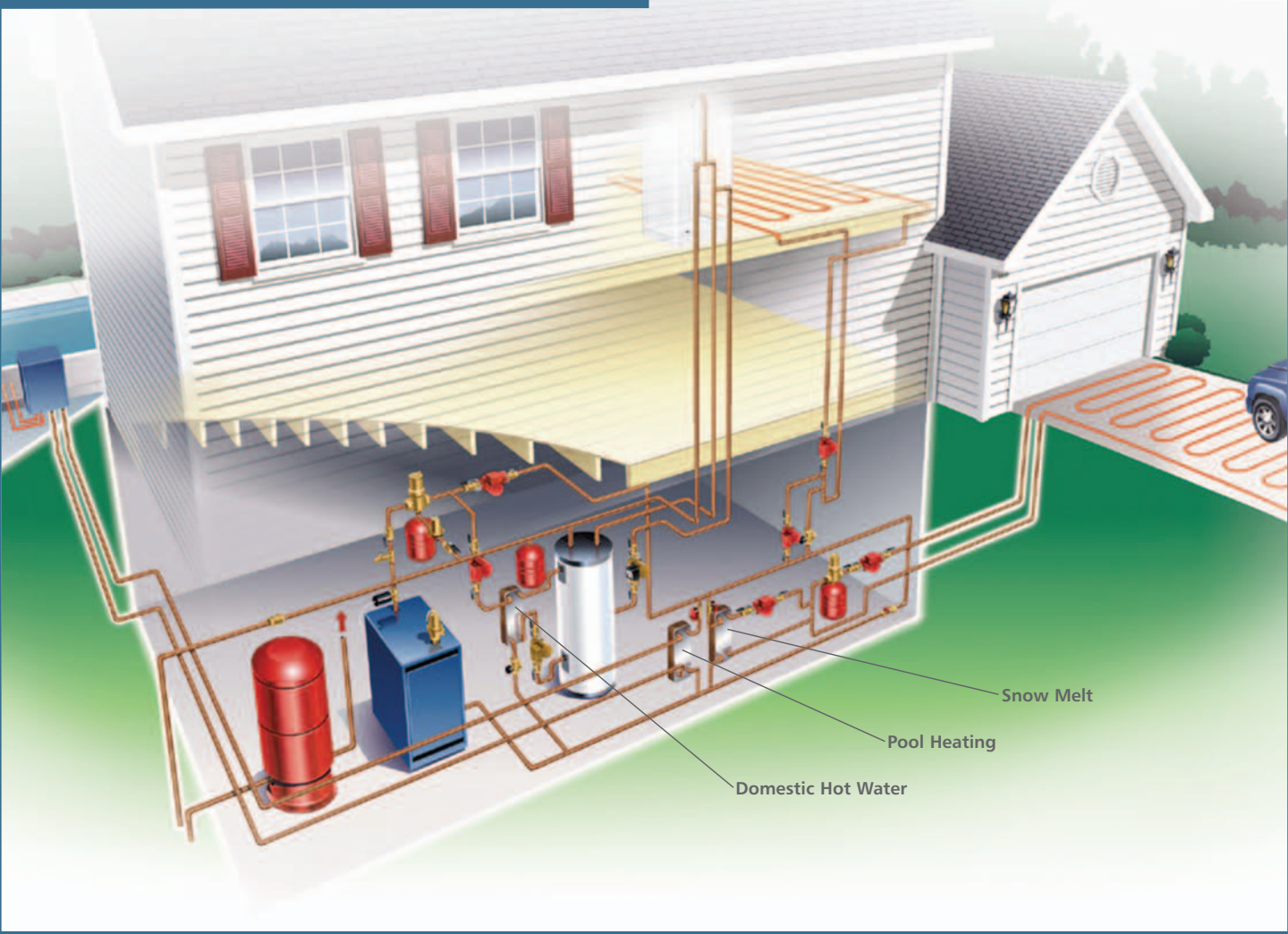
- radiant floors.
- snow melt.
- domestic hot water.
- pool heating.

Superior heat transfer.

The BPX Brazed Plate Heat Exchangers offer the highest level of thermal efficiency and durability in a compact, low cost unit. The corrugated plate design provides very high heat transfer coefficients, resulting in a more compact design. The unit's stainless steel plates are vacuum brazed together to form a durable, integral piece that can withstand high pressure and temperature.

Compared to shell and tube exchangers, the BPX Heat Exchangers offer a more compact design

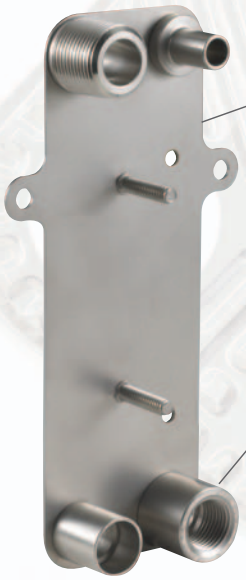
- 1/6 the size
- 1/5 the weight
- 1/8 the liquid required
- 1/3 to 1/5 of the surface area required



Small size. Big impact.

Mechanical Design:
Design pressures up to 435 psig.
Maximum design temperature up to 450˚F.
Minimum design temperature to -310˚F.

Construction Codes:
Available codes include UL, CRN, and ASME Code Stamp.



Mounting:
Reduce mounting costs with optional threaded studs or integral mounting bracket.

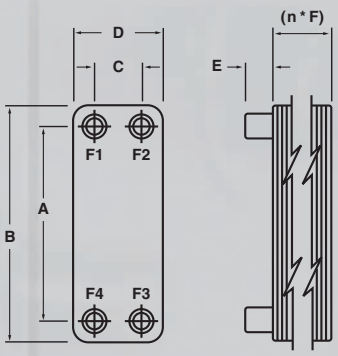
Materials:
Stainless Steel 316L plates. Copper brazed material.

Connections:
From 1/2 inch to 4 inch. Standard connection options include NPT, SAE Flanged and Sweat. Custom connections available.

Capacity:
Up to 800 GPM and 350 Sq.ft. of surface area.

Designed for dependability.

By using a brazing process we eliminated the need for gasketed or rolled joints commonly found in traditional exchangers. This allows for higher operating pressures and temperatures with no maintenance and no leaks. The corrugated plates easily handle highly viscous fluids, turbulating them for maximum efficiency. Corrosion-resistant materials ensure a long operating life.



STANDARD CONSTRUCTION	
Cover plates	ASTM 316L Stainless Steel
Channel plates	ASTM 316L Stainless Steel
Connections	ASTM 316L Stainless Steel M26 NPT, SAE Flanged and Sweat Connections available
Brazing material	Copper

TECHNICAL DATA STANDARD CONSTRUCTION	
Design Pressure	435 psi (30 bar)
Design temperature	450 F (224 C)

CONSTRUCTION CODES
UL, CRN, ASME Code Stamp option.

DIMENSIONS

Model	A		B		C		D		E		F		Connection	Volume		Surface Area		Max no. of plates
	in.	mm.	in.	mm.	in.	mm.	in.	mm.	in.	mm	in.	mm		Gal/chnl.	(L/chnl.)	Sq. Ft.	(Sq. M)	
BP400	6.77	172	8.2	208	1.65	42	3.1	79	0.95	24	0.081	2	3/4" MNPT	0.0076	0.029	0.126	0.012	50
BP410	9.84	250	12.2	310	1.97	50	4.4	112	0.95	24	0.094	2	1" MNPT	0.0159	0.060	0.281	0.026	150
BP411	9.84	250	12.2	310	1.97	50	4.4	112	0.95	24	0.094	2	1" MNPT	0.0159	0.060	0.28	0.026	150
BP412	9.84	250	12.2	310	1.97	50	4.4	112	0.95	24	0.094	2	1" MNPT	0.0159	0.060	0.281	0.026	150
BP415	18.35	466	20.7	526	1.97	50	4.4	112	0.95	24	0.094	2	1"MNPT	0.073	0.103	0.566	0.053	150
BP422	20.43	519	24.3	617	3.62	92	7.5	191	1.9	48	0.112	3	2" MNPT	0.0704	0.266	1.062	0.099	150

Selection Tables*

RADIANT FLOOR HEATING — SECTION SCHEDULE BASIS

Boiler Side: Water: 180 F Supply, 160 F Return **Radiant Floor Side:** 120 F Supply, 100 F Return

Model	HEAT EXCHANGER BTU/Hr (max output)	BOILER SIDE Flow GPM	BOILER SIDE Pressure Drop PSI	RADIANT WATER SIDE Flow GPM	RADIANT WATER SIDE Pressure Drop PSI	B&G PUMP SELECTION†	PIPE SIZE
BP400-10	25,000	2.6	1.7	2.6	1.2	NRF-22	3/4"
BP400-10	30,000	3.1	2.4	3.0	1.6	NRF-22	3/4"
BP400-10	35,000	3.6	3.1	3.5	2.1	NRF-22	3/4"
BP400-10	40,000	4.1	4.0	4.0	2.8	NRF-36	3/4"
BP400-10	45,000	4.6	5.0	4.5	3.4	NRF-36	1"
BP400-10	50,000	5.2	6.1	5.0	4.2	NRF-36	1"
BP400-10	60,000	6.2	8.6	6.1	5.9	NRF-36	1"
BP400-20	75,000	7.7	3.0	7.6	2.6	NRF-36	1"
BP400-20	100,000	10.3	5.2	10.1	4.4	NRF-36	1-1/4"
BP400-20	125,000	12.9	7.9	12.6	6.8	NRF-36	1-1/4"
BP400-30	150,000	15.5	5.3	15.2	4.9	NRF-36	1-1/4"
BP400-30	175,000	18.0	7.1	17.7	6.5	PL-36	1-1/4"
BP400-40	200,000	20.6	5.8	20.2	5.5	PL-36	1-1/2"
BP400-40	225,000	23.2	7.3	22.7	6.9	PL-55	1-1/2"
BP411-20	250,000	25.8	3.3	25.2	3.0	PL-75	2"
BP411-20	275,000	28.3	4.0	27.8	3.6	PL-50	2"
BP411-20	300,000	30.9	4.7	30.3	4.2	PL-55	2"
BP411-20	350,000	36.1	6.3	35.3	5.6	PL-55	2"
BP411-30	400,000	51.2	4.8	40.4	4.6	601	2"
BP411-30	450,000	46.4	6.1	45.4	5.8	607	2"
BP411-30	500,000	51.5	7.4	50.5	7.1	608	2"
BP422-40	600,000	61.8	8.1	60.6	7.6	609	2-1/2"
BP422-50	700,000	72.1	7.1	70.7	6.8	612	2-1/2"
BP422-60	800,000	82.4	6.5	80.8	6.3	612	2-1/2"
BP422-80	900,000	92.7	4.9	90.9	4.8	611	3"
BP422-80	1,000,000	103	6.0	101.0	5.9	612	3"
BP422-80	1,100,000	113.3	7.2	111.1	7.1	625	3"
BP422-100	1,200,000	123.6	5.9	121.2	5.8	625	3"
BP422-100	1,350,000	139.1	7.5	136.3	7.4	619	3"

Larger Models available upon request

†*Assumptions: 50 ft. of total equivalent length of pipe at sizes shown, 1/2 PEX, 0.8 gpm, longest radiant loop is 200 ft., 40 BTU/hr per ft²*

DOMESTIC WATER — SECTION SCHEDULE BASIS

Boiler Side: Water: 180 F Supply, 130 F Return **Domestic Water Side:** 50 F Supply, 140 F Return

Model	HEAT EXCHANGER BTU/Hr (max output)	BOILER SIDE Flow GPM	BOILER SIDE Pressure Drop PSI	DOMESTIC WATER SIDE Flow GPM	DOMESTIC WATER SIDE Pressure Drop PSI	B&G PUMP SELECTION†	PIPE SIZE
BP400-10	25,000	1.0	0.3	0.6	0.1	NBF-9U	3/4"
BP400-10	30,000	1.2	0.4	0.7	0.1	NBF-9U	3/4"
BP400-10	35,000	1.4	0.6	0.8	0.1	NBF-9U	3/4"
BP400-10	40,000	1.7	0.7	0.9	0.2	NBF-9U	3/4"
BP400-10	45,000	1.9	0.9	1.0	0.2	NBF-9U	3/4"
BP400-10	50,000	2.1	1.1	1.1	0.2	NBF-9U	3/4"
BP400-10	60,000	2.5	1.6	1.3	0.3	NBF-9U	3/4"
BP400-20	75,000	3.1	0.6	1.7	0.2	NBF-9U	3/4"
BP400-20	100,000	4.1	1.0	2.2	0.3	NBF-9U	3/4"
BP400-20	125,000	5.2	1.5	2.8	0.4	NBF-9U	3/4"
BP400-20	150,000	6.2	2.1	3.3	0.6	NBF-9U	3/4"
BP400-30	175,000	7.2	1.4	3.9	0.4	NBF-9U	3/4"
BP400-30	200,000	8.3	1.8	4.4	0.5	NBF-9U	1"
BP400-30	225,000	9.3	2.2	5.0	0.7	NBF-9U	1"
BP400-40	250,000	10.3	1.8	5.6	0.5	NBF-9U	1"
BP400-40	275,000	11.4	2.1	6.1	0.7	NBF-9U	1"
BP400-40	300,000	12.4	2.5	6.7	0.8	NBF-9U	1"
BP400-40	350,000	14.4	3.4	7.8	1.0	NBF-9U	1"
BP410-30	400,000	16.5	4.9	8.9	1.4	NBF-12	1-1/4"
BP411-30	450,000	18.6	6.2	10.0	1.8	NBF-12	1-1/4"
BP411-30	500,000	20.6	7.6	11.1	2.2	NBF-12	1-1/4"
BP410-40	600,000	24.8	6.2	13.3	2.0	NBF-22	1-1/4"
BP410-40	700,000	28.9	7.7	15.6	2.8	NBF-22	1-1/2"
BP410-50	800,000	33.0	6.9	17.8	2.4	NBF-33	1-1/2"
BP410-50	900,000	37.1	8.5	20.0	3.0	NBF-33	1-1/2"
BP422-30	1,000,000	41.3	5.9	22.2	2.2	NBF-33	1-1/2"
BP422-30	1,100,000	45.4	7.0	24.4	2.6	NBF-33	2"
BP422-30	1,200,000	49.5	8.0	26.7	3.2	NBF-36	2"
BP422-40	1,350,000	55.7	6.1	30.0	2.2	NBF-36	2"
BP422-40	1,500,000	61.9	7.5	33.3	2.8	NBF-45	2"
BP422-50	1,750,000	72.2	6.7	38.9	2.4	PL-45	2"
BP422-50	2,000,000	82.5	8.4	44.4	3.0	PL-50	2"
BP422-60	2,500,000	103.1	9.0	55.5	3.5	PL-75	2-1/2"

Larger Models Available

†*Assumptions: 20 ft. of copper pipe with (6) 90 deg elbows*

SNOW MELT — SECTION SCHEDULE BASIS

Boiler Side: Water: 180 F Supply, 160 F Return **Snow Melt Side:** 40% P.G. 130 F Supply, 100 F Return

Model	HEAT EXCHANGER BTU/Hr (max output)	BOILER SIDE Flow GPM	BOILER SIDE Pressure Drop PSI	SNOW MELT WATER SIDE Flow GPM	SNOW MELT WATER SIDE Pressure Drop PSI	B&G PUMP SELECTION†	PIPE SIZE
BP400-10	25,000	2.6	1.7	1.8	0.7	NRF-36	3/4"
BP400-10	30,000	3.1	2.4	2.1	0.9	NRF-36	3/4"
BP400-10	35,000	3.6	3.2	2.5	1.3	NRF-36	3/4"
BP400-10	40,000	4.1	4.1	2.9	1.6	NRF-36	3/4"
BP400-10	45,000	4.6	5.1	3.2	2.1	NRF-36	3/4"
BP400-10	50,000	5.2	6.2	3.6	2.5	NRF-36	3/4"
BP400-10	60,000	6.2	8.7	4.3	3.5	NRF-36	1"
BP400-20	75,000	7.7	3.1	5.4	1.6	NRF-36	1"
BP400-20	100,000	10.3	5.4	7.1	2.7	NRF-36	1"
BP400-20	125,000	12.9	8.2	8.9	4.2	NRF-36	1-1/4"
BP400-30	150,000	15.5	5.8	10.7	3.1	NRF-36	1-1/4"
BP400-30	175,000	18.0	7.8	12.5	4.2	PL-36	1-1/4"
BP400-40	200,000	20.6	6.7	14.3	3.6	PL-36	1-1/4"
BP400-40	225,000	23.2	8.4	16.1	4.6	PL-55	1-1/4"
BP412-20	250,000	25.8	8.4	17.9	4.0	PL-55	1-1/2"
BP412-30	275,000	28.3	4.9	19.6	2.5	PL-55	1-1/2"
BP412-30	300,000	30.9	5.8	21.4	2.9	PL-55	1-1/2"
BP412-30	350,000	36.0	7.7	25.0	3.9	PL-55	1-1/2"
BP412-40	400,000	41.2	6.5	28.6	3.4	PL-55	2"
BP412-40	450,000	46.4	8.1	32.1	4.2	613	2"
BP412-50	500,000	51.5	7.6	35.7	4.0	613	2"
BP422-40	600,000	61.8	8.1	42.9	4.4	609	2"
BP422-50	700,000	72.1	7.1	50.0	3.9	614	2"
BP422-60	800,000	82.4	6.6	57.4	3.6	613	2-1/2"
BP422-60	900,000	92.7	7.7	64.3	4.8	614	2-1/2"
BP422-80	1,000,000	103.0	6.0	71.4	3.3	614	2-1/2"
BP422-80	1,100,000	113.3	7.3	78.6	4.1	616	2-1/2"
BP422-80	1,200,000	123.6	8.2	85.7	4.9	625	3"
BP422-100	1,350,000	139.1	7.4	96.4	4.1	625	3"

Larger Models Available

†*Assumptions: 50 ft. of total equivalent length of pipe at sizes shown, 5/8 PEX, 2.0 gpm, longest radiant loop is 250 ft., 126 BTU/hr per ft²*

SWIMMING POOL — SECTION SCHEDULE BASIS

Boiler Side: Water: 180 F Supply, 130 F Return **Pool Heating Side:** 70 F Supply, 107 F Return

Model (3)	POOL SIZE GALLONS (1)	HEAT EXCHANGER BTU/Hr (max output)	BOILER SIDE Flow GPM	BOILER SIDE Pressure Drop PSI	POOL WATER FLOW (2) GPM	POOL SIDE PRESSURE DROP PSI
BP400-10	2,000	33,300	1.37	0.52	1.8	0.63
BP400-10	4,000	66,600	2.75	1.9	3.6	2.3
BP400-10	6,000	99,900	4.1	4.1	5.4	5
BP400-20	8,000	133,200	5.5	1.66	7.3	2.5
BP400-30	10,000	166,823	7.0	2.3	9.0	5.1
BP400-30	15,000	250,234	10.0	2.7	14.0	4.5
BP412-20	20,000	333,645	13.0	2.5	18.0	3.4
BP412-20	25,000	417,056	17.2	4.0	22.6	5.5
BP412-20	30,000	500,467	20.7	5.6	27.2	7.7
BP412-30	40,000	667,290	27.0	3.9	36.0	6.9
BP422-30	50,000	834,113	34.4	4.7	45.2	7.6
BP422-40	60,000	1,000,936	40.0	3.7	54.0	6.9
BP422-40	70,000	1,167,758	48.0	5.1	63.0	8.2
BP422-50	80,000	1,334,581	53.0	3.7	72.0	6.9
BP422-50	90,000	1,501,400	62.0	5.3	81.3	8.6
BP422-60	100,000	1,668,226	67.0	4.7	90.0	7.9
BP422-80	120,000	2,001,871	82.5	3.9	108.0	6.9
BP422-100	150,000	2,502,000	103.2	4.2	135.6	7.4

Larger Models Available

1) Provides approx. 2°F per hour heating with 180°F boiler to achieve 80°F pool temperature.
2) Pool water flow rate usually requires flow by pass from main pool circulation.
3) Chlorinated pool water can be corrosive to SS316L and Copper. Proper control of chlorine levels is required or alternate materials of construction should be considered.

*** Consult your local B&G Representative for more detailed sizing and selection information**