

JVB Slip Jointed Enclosure

## Specification

**ENCLOSURE:**

- STYLE: Flat Top, Front & Top Outlet  
 OUTLET: Stamped Louvers  
 Pencil Proof  
 LENGTHS: 2'0" thru 8'0" in 6" Increments  
 MAT'L:  16 Ga. CRS (Std)  
 14 Ga. CRS (Opt'l)  
 16 Ga. Stainless Steel (Opt'l)  
 14 Ga. Stainless Steel (Opt'l)  
 14 Ga. Aluminum (Opt'l)  
 12 Ga. Aluminum (Opt'l)  
 HEIGHT:  24"  
 30"  
 36"  
 FINISH:  Baked Powder (Std)  
 Baked Metallic (Opt'l)

**ACCESSORIES:**

- JV Overlapping Type  
 All accessories return to the wall at the bottom and have pre-punched holes for fastening to the wall.

**ELEMENT:**

- TYPE:  Cu/Al (Mechanically Expanded)  
 LENGTHS: 2'0" thru 12'6" in 1" Increments for 1" & 1-1/4" Cu.  
 2'0" thru 8'0" in 1" Increments for 3/4" Cu.  
 One End Flared (Std)  
 See Catalog for Working Pressures

**DAMPER:**

- Damper Blades Factory Installed  
 Knob Damper (Opt'l)  
 Tamper Resistant (Opt'l)

**BACKPLATE:**

- TYPE:  Partial B/P  
 LENGTHS: 8'0" Only  
 MAT'L:  20 Ga. Prepainted (Std)  
 18 Ga. Galvannealed (Opt'l)  
 TYPE:  Full Ht. B/P (Opt'l)  
 LENGTHS: 2'0" thru 8'0" in 6" Increments  
 MAT'L:  20 Ga. Galvannealed (Opt'l)  
 20 Ga. Painted (Opt'l)  
 18 Ga. Painted (Opt'l)

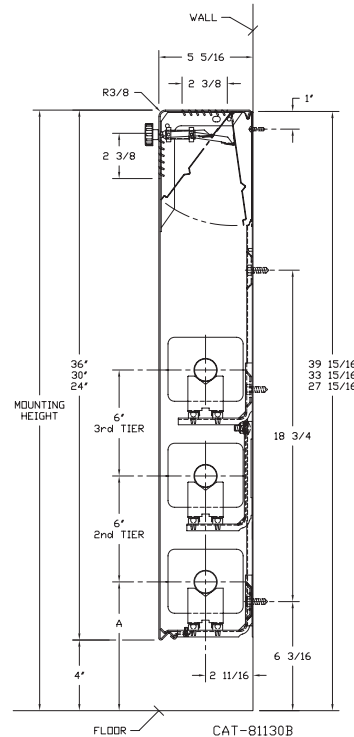
**AIRSEAL:**

- 1/8" x 3/8" Closed Cell (Opt'l)

**BRACKETS:**

- Water Brkt (with Stand-Off)  
 Stand-Off not required with 24" height  
 B.B. Hanger, Bracket Mtd  
 B.B. Hanger, Wall Mtd  
 Wall Mtd B.B. Hanger required for 3rd Tier Element

ELEMENT TUBE SIZE	FIN SIZE HEIGHT x WIDTH	CRADLE NUMBER	A
3/4" COPPER	3-5/8 x 4-1/4	2	7"
3/4" COPPER	4-1/4 x 4-1/4	3A	7-3/8"
1" COPPER	3-5/8 x 4-1/4	2	7-3/16"
1" COPPER	4-1/4 x 4-1/4	2	7-3/16"
1-1/4" COPPER	3-5/8 x 4-1/4	2	7-5/16"
1-1/4" COPPER	4-1/4 x 4-1/4	2	7-5/16"
1" STEEL	4-1/4 x 4-1/4	2	7-5/16"
1-1/4" STEEL	4-1/4 x 4-1/4	2	7-1/2"
2" STEEL	4-1/4 x 4-1/4	1	7-1/4"



- JVB-FT 24  
 JVB-FT 30  
 JVB-FT 36



260 North Elm St., Westfield, MA 01085  
 (413) 564-5535  
 www.sterlingheat.com



PROJECT: \_\_\_\_\_ DATE: \_\_\_\_\_  
 LOCATION: \_\_\_\_\_  
 ARCHITECT: \_\_\_\_\_  
 ENGINEER: \_\_\_\_\_  
 CONTRACTOR: \_\_\_\_\_  
 PO NUMBER: \_\_\_\_\_





# JVB-FT Style "FT" Front & Top Outlet

## STEEL ELEMENT RATINGS

ALL RATINGS ARE BASED ON 3 FPS WATER VELOCITY, 65°F ET

### STYLE LT Series "FT"

TUBE SIZE	CATALOG DESIGNATION	FIN SIZE HEIGHT X WIDTH	FIN PER FT.	FIN THICKNESS IN INCHES	ENCL DEPTH AND HEIGHT IN INCHES	TIERS AND CENTERS IN INCHES	MTG. HEIGHT IN INCHES	STEAM 215°F FACTOR	HOT WATER (AVG.)											
									200°F	190°F	180°F	170°F	160°F	150°F	140°F	130°F	120°F	110°F	100°F	
									CORRECTION FACTORS FOR AVERAGE WATER TEMPERATURES											
1"	S43	4-1/4" SQ.	32	.032	24B 1	28	1460	1460	1260	1140	1010	890	770	660	580	480	380	290	220	
					24B 2-6 CL	28	2095	1800	1630	1450	1280	1110	940	840	690	540	420	310		
					24B 3-6 CL	28	2410	2070	1880	1660	1470	1280	1080	960	800	630	480	360		
					30B 1	34	1620	1390	1260	1120	990	860	730	650	530	420	320	240		
					30B 2-6 CL	34	2140	1840	1670	1480	1310	1130	960	860	710	560	430	320		
					30B 3-6 CL	34	2460	2120	1920	1700	1500	1300	1110	980	810	640	490	370		
					36B 1	40	1780	1530	1390	1230	1090	940	800	710	590	460	360	270		
					36B 2-6 CL	40	2360	2030	1840	1630	1440	1250	1060	940	780	610	470	350		
					36B 3-6 CL	40	2710	2330	2110	1870	1650	1440	1220	1080	890	700	540	410		
					24B 1	28	1605	1380	1250	1110	980	850	720	640	530	420	320	240		
					24B 2-6 CL	28	2295	1970	1790	1580	1400	1220	1030	920	760	600	460	340		
					24B 3-6 CL	28	2620	2250	2040	1810	1600	1390	1180	1050	860	680	520	390		
30B 1	34	1780	1530	1390	1230	1090	940	800	710	590	460	360	270							
30B 2-6 CL	34	2360	2030	1840	1630	1440	1250	1060	940	780	610	470	350							
30B 3-6 CL	34	2690	2310	2100	1860	1640	1430	1210	1080	890	700	540	400							
36B 1	40	1960	1690	1530	1350	1200	1040	880	780	650	510	390	290							
36B 2-6 CL	40	2600	2240	2030	1790	1590	1380	1170	1040	860	680	520	390							
36B 3-6 CL	40	2960	2550	2310	2040	1810	1570	1330	1180	980	770	590	440							
1"	S44	4-1/4" SQ.	40	.032	24B 1	28	1680	1440	1310	1160	1020	890	760	670	550	440	340	250		
					24B 2-6 CL	28	2350	2020	1830	1620	1430	1250	1060	940	780	610	470	350		
					24B 3-6 CL	28	2660	2290	2070	1840	1620	1410	1200	1060	880	690	530	400		
					30B 1	34	1870	1610	1460	1290	1140	990	840	750	620	490	370	280		
					30B 2-6 CL	34	2480	2130	1930	1710	1510	1310	1120	990	820	640	500	370		
					30B 3-6 CL	34	2800	2410	2180	1930	1710	1480	1260	1120	920	730	560	420		
					36B 1	40	2060	1770	1610	1420	1260	1090	930	820	680	540	410	310		
					36B 2-6 CL	40	2730	2350	2130	1880	1670	1450	1230	1090	900	710	550	410		
					36B 3-6 CL	40	3080	2650	2400	2130	1880	1630	1390	1230	1020	800	620	460		
					24B 1	28	1240	1070	970	860	760	660	560	500	410	320	250	190		
					24B 2-6 CL	28	1940	1670	1510	1340	1180	1030	870	780	640	500	390	290		
					24B 3-6 CL	28	2230	1920	1740	1540	1360	1180	1000	890	740	580	450	330		
30B 1	34	1380	1190	1080	950	840	730	620	550	460	360	280	210							
30B 2-6 CL	34	1830	1570	1430	1260	1120	970	820	730	600	480	370	270							
30B 3-6 CL	34	2100	1810	1640	1450	1280	1110	950	840	690	550	420	320							
36B 1	40	1520	1310	1190	1050	930	810	680	610	500	400	300	230							
36B 2-6 CL	40	2010	1730	1570	1390	1230	1070	900	800	660	520	400	300							
36B 3-6 CL	40	2310	1990	1800	1590	1410	1220	1040	920	760	600	460	350							
1-1/4"	S143	4-1/4" SQ.	32	.032	24B 1	28	1660	1430	1290	1150	1010	880	750	660	550	430	330	250		
					24B 2-6 CL	28	2410	2070	1880	1660	1470	1280	1080	960	800	630	480	360		
					24B 3-6 CL	28	2750	2370	2150	1900	1680	1460	1240	1100	910	720	550	410		
					30B 1	34	1850	1590	1440	1280	1130	980	830	740	610	480	370	280		
					30B 2-6 CL	34	2450	2110	1910	1690	1490	1300	1100	980	810	640	490	370		
					30B 3-6 CL	34	2790	2400	2180	1930	1700	1480	1260	1120	920	730	560	420		
					36B 1	40	2040	1750	1590	1410	1240	1080	920	820	670	530	410	310		
					36B 2-6 CL	40	2700	2320	2110	1860	1650	1430	1220	1080	890	700	540	410		
					36B 3-6 CL	40	3080	2650	2400	2130	1880	1630	1390	1230	1020	800	620	460		
					24B 1	28	1670	1440	1300	1150	1020	890	750	670	550	430	330	250		
					24B 2-6 CL	28	2305	1980	1800	1590	1410	1220	1040	920	760	600	460	350		
					24B 3-6 CL	28	2600	2240	2030	1790	1590	1380	1170	1040	860	680	520	390		
30B 1	34	1860	1600	1450	1280	1130	990	840	740	610	480	370	280							
30B 2-6 CL	34	2460	2120	1920	1700	1500	1300	1110	980	810	640	490	370							
30B 3-6 CL	34	2780	2390	2170	1920	1700	1470	1250	1110	920	720	560	420							
36B 1	40	2050	1760	1600	1410	1250	1090	920	820	680	530	410	310							
36B 2-6 CL	40	2710	2330	2110	1870	1650	1440	1220	1080	890	700	540	410							
36B 3-6 CL	40	3060	2630	2390	2110	1870	1620	1380	1220	1010	800	610	460							
1-1/4"	S145	4-1/4" SQ.	50	.032	24B 1	28	1210	1040	940	830	740	640	540	480	400	310	240	180		
					24B 2-6 CL	28	1920	1650	1500	1320	1170	1020	860	770	630	500	380	290		
					24B 3-6 CL	28	2210	1900	1720	1520	1350	1170	990	880	730	570	440	330		
					30B 1	34	1350	1160	1050	930	820	720	610	540	450	350	270	200		
					30B 2-6 CL	34	1790	1540	1400	1240	1090	950	810	720	590	470	360	270		
					30B 3-6 CL	34	2060	1770	1610	1420	1260	1090	930	820	680	540	410	310		
					36B 1	40	1490	1280	1160	1030	910	790	670	600	490	390	300	220		
					36B 2-6 CL	40	1970	1690	1540	1360	1200	1040	890	790	650	510	390	300		
					36B 3-6 CL	40	2270	1950	1770	1570	1380	1200	1020	910	750	590	450	340		
					24B 1	28	1430	1230	1120	990	870	760	640	570	470	370	290	210		
					24B 2-6 CL	28	2160	1860	1680	1490	1320	1140	970	860	710	560	430	320		
					24B 3-6 CL	28	2480	2130	1930	1710	1510	1310	1120	990	820	640	500	370		
30B 1	34	1590	1370	1240	1100	970	840	720	640	520	410	320	240							
30B 2-6 CL	34	2110	1810	1650	1460	1290	1120	950	840	700	550	420	320							
30B 3-6 CL	34	2430	2090	1900	1680	1480	1290	1090	970	800	630	490	360							
36B 1	40	1750	1510	1370	1210	1070	930	790	700	580	460	350	260							
36B 2-6 CL	40	2320	2000	1810	1600	1420	1230	1040	930	770	600	460	350							
36B 3-6 CL	40	2670	2300	2080	1840	1630	1420	1200	1070	880	690	530	400							

# Design Data

## COMMERCIAL FINNED TUBE CHARTS FOR RATING CORRECTIONS

For assistance with ratings and selection, please use our online Specifier.

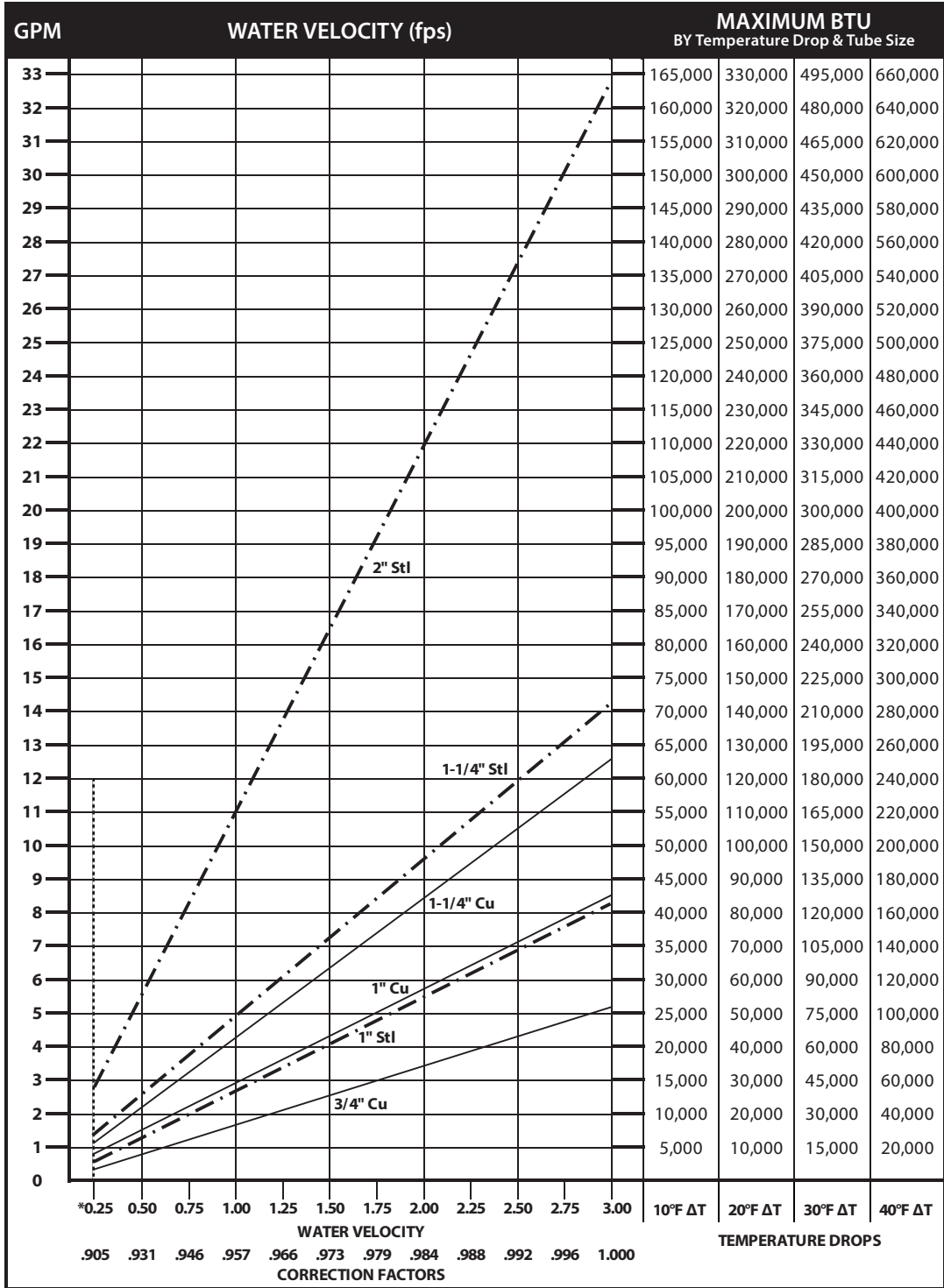
CORRECTION FACTORS FOR WATER TEMPERATURES AND AIR TEMPERATURES OTHER THAN STANDARD															
AVERAGE WATER TEMP. °F	ENTERING AIR TEMPERATURE °F														
	45	55	STD 65	70	75	80	85	90	95	100	110	120	130	140	150
90	.19	.13	.11	.06											
100	.25	.19	.15	.11	.08	.06									
110	.31	.25	.20	.16	.13	.11	.08	.06							
120	.38	.31	.26	.21	.19	.16	.13	.11	.08	.06					
130	.45	.38	.33	.28	.25	.21	.19	.16	.13	.11	.06				
140	.53	.45	.40	.34	.31	.28	.25	.21	.19	.16	.11	.06			
150	.61	.53	.45	.41	.38	.34	.31	.28	.25	.21	.16	.11	.06		
160	.69	.61	.53	.49	.45	.41	.38	.34	.31	.28	.21	.16	.11	.06	
170	.77	.69	.61	.57	.53	.49	.45	.41	.38	.34	.28	.21	.16	.11	.06
180	.86	.77	.69	.65	.61	.57	.53	.49	.45	.41	.34	.28	.21	.16	.11
190	.95	.86	.78	.73	.69	.65	.61	.57	.53	.49	.41	.34	.28	.21	.16
200	1.05	.95	.86	.82	.77	.73	.69	.65	.61	.57	.49	.41	.34	.28	.21
210	1.14	1.05	.95	.91	.86	.82	.77	.73	.69	.65	.57	.49	.41	.34	.28
▶ 215 (STD.)	1.19	1.09	1.00	.95	.91	.86	.82	.77	.73	.69	.61	.53	.45	.38	.31
220	1.24	1.14	1.05	1.00	.95	.91	.86	.82	.77	.73	.65	.57	.49	.41	.34
230	1.34	1.24	1.14	1.09	1.05	1.00	.95	.91	.86	.82	.73	.65	.57	.49	.41
240	1.44	1.34	1.25	1.19	1.14	1.09	1.05	1.00	.95	.91	.82	.73	.65	.57	.49
250	1.55	1.44	1.34	1.29	1.24	1.19	1.14	1.09	1.05	1.00	.91	.82	.73	.65	.57
260	1.66	1.55	1.44	1.39	1.34	1.29	1.24	1.19	1.14	1.09	1.00	.91	.82	.73	.65
270	1.76	1.66	1.55	1.50	1.44	1.39	1.34	1.29	1.24	1.19	1.09	1.00	.91	.82	.73
280	1.87	1.76	1.66	1.60	1.55	1.50	1.44	1.39	1.34	1.29	1.19	1.09	1.00	.91	.82
290	1.99	1.87	1.76	1.71	1.66	1.60	1.55	1.50	1.44	1.39	1.29	1.19	1.09	1.00	.91
300	2.10	1.99	1.87	1.82	1.76	1.71	1.66	1.60	1.55	1.50	1.39	1.29	1.19	1.09	1.00

CORRECTION FACTORS FOR STEAM PRESSURES AND AIR TEMPERATURES OTHER THAN STANDARD																
STEAM		TEMP. °F	ENTERING AIR TEMPERATURE °F													
PRESSURE			45	55	STD 65	70	75	80	85	90	100	110	120	130	140	150
GAUGE	ABS. PSI															
(VAC) 15" HG	7.32	178.9	0.90	0.80	0.70	0.65	0.60	0.56	0.51	0.45	0.39	0.32	0.25	0.18	0.13	0.08
(VAC) 10" HG	9.78	192.2	1.02	0.91	0.81	0.76	0.71	0.66	0.62	0.55	0.48	0.40	0.33	0.26	0.20	0.14
(VAC) 5" HG	12.25	202.9	1.11	1.00	0.90	0.85	0.79	0.75	0.70	0.63	0.56	0.48	0.40	0.33	0.27	0.20
▶ 0 PSI	14.696	212.0	1.19	1.09	0.97	0.92	0.87	0.82	0.77	0.70	0.63	0.54	0.46	0.38	0.31	0.25
.899	15.595	215.0	1.22	1.11	1.00	0.95	0.90	0.84	0.80	0.75	0.65	0.57	0.48	0.40	0.33	0.26
5	19.70	227.1	1.34	1.22	1.11	1.05	1.00	0.95	0.90	0.81	0.75	0.66	0.57	0.49	0.41	0.34
10	24.70	239.4	1.45	1.33	1.22	1.17	1.11	1.05	1.00	0.91	0.85	0.75	0.66	0.58	0.50	0.42
15	29.70	249.8	1.55	1.43	1.31	1.26	1.20	1.14	1.09	1.00	0.94	0.84	0.75	0.66	0.57	0.49
20	34.70	258.5	1.63	1.52	1.40	1.33	1.28	1.23	1.17	1.07	1.02	0.92	0.82	0.73	0.64	0.55
25	39.70	266.8	1.71	1.59	1.47	1.41	1.36	1.30	1.25	1.15	1.09	0.98	0.89	0.80	0.71	0.62
30	44.70	274.0	1.78	1.66	1.54	1.48	1.42	1.37	1.31	1.21	1.15	1.05	0.95	0.85	0.76	0.68
40	54.70	286.7	1.91	1.79	1.66	1.61	1.54	1.49	1.43	1.32	1.27	1.16	1.06	0.97	0.87	0.78
50	64.70	297.7	2.02	1.90	1.77	1.71	1.65	1.60	1.54	1.42	1.37	1.26	1.16	1.06	0.96	0.87
60	74.70	307.3	2.10	2.00	1.87	1.81	1.75	1.69	1.63	1.51	1.47	1.35	1.25	1.15	1.05	0.95
70	84.70	316.0	2.20	2.09	1.95	1.89	1.83	1.77	1.71	1.59	1.55	1.44	1.33	1.23	1.12	1.03
80	94.70	323.9	2.27	2.17	2.03	1.97	1.91	1.85	1.80	1.69	1.63	1.52	1.41	1.31	1.20	1.10
90	104.70	331.2	2.36	2.24	2.11	2.05	1.98	1.93	1.87	1.74	1.70	1.59	1.48	1.38	1.28	1.17
100	114.70	337.9	2.43	2.31	2.18	2.11	2.05	2.00	1.94	1.81	1.77	1.65	1.54	1.44	1.33	1.23
125	139.70	352.9	2.59	2.47	2.33	2.27	2.21	2.16	2.10	1.96	1.92	1.80	1.69	1.59	1.48	1.38
150	164.70	365.9	2.73	2.62	2.47	2.43	2.35	2.29	2.23	2.08	2.05	1.94	1.82	1.72	1.61	1.51
175	189.70	377.4	2.86	2.74	2.60	2.54	2.47	2.41	2.35	2.21	2.17	2.05	1.95	1.85	1.73	1.63
200	214.70	387.8	2.95	2.85	2.71	2.63	2.58	2.52	2.47	2.31	2.29	2.17	2.06	1.96	1.84	1.75

From Keenan and Keyes — Linear Interpolation. NOTE: Gauge pressure should be corrected for altitude.

Rate of pitch for steam 1/2" drop over 20-foot run.

# Design Data



\*Do not design below .25 fps.

## DYNAMIC FORMULAS

$$\text{BTU} = \text{GPM} \times 500 \times \text{TD}$$

$$\text{GPM} = \left( \frac{\text{BTU}}{500} \right) \div \text{TD}$$

$$\text{TD} = \left( \frac{\text{BTU}}{500} \right) \div \text{GPM}$$

Pressure Drop at Given Water Velocities (Feet of Water per 100 ft. of pipe) based on Hazen - Williams calculation												
Nominal Pipe Size	Water Velocity (ft/sec)											
	0.25	0.50	0.75	1.00	1.25	1.50	1.75	2.00	2.25	2.50	2.75	3.00
3/4" Copper	0.06	0.20	0.42	0.72	1.09	1.53	2.04	2.61	3.25	3.95	4.71	5.53
1" Copper	0.04	0.15	0.32	0.54	0.81	1.14	1.52	1.94	2.42	2.94	3.50	4.11
1 1/4" Copper	0.03	0.12	0.25	0.43	0.64	0.90	1.20	1.54	1.92	2.33	2.78	3.26
1" Steel	0.04	0.15	0.32	0.54	0.81	1.14	1.52	1.95	2.42	2.94	3.51	4.12
1 1/4" Steel	0.03	0.11	0.23	0.40	0.60	0.84	1.12	1.44	1.79	2.17	2.59	3.05
2" Steel	0.02	0.07	0.14	0.25	0.37	0.52	0.69	0.89	1.10	1.34	1.60	1.88



# Design Data

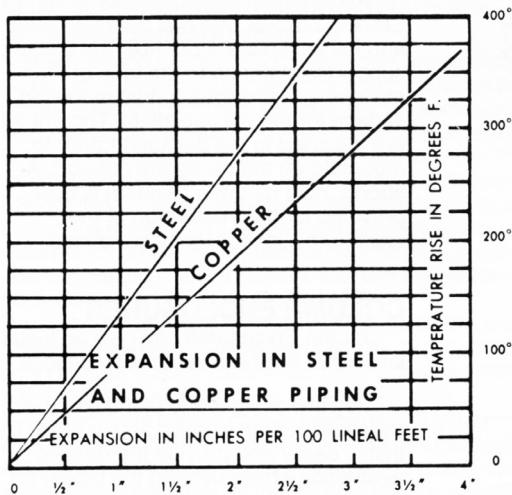
## GUARANTEED WORKING PRESSURES

- 1" IPS – 780 at Temperatures up to 650°F.
- 1-1/4" IPS – 660 at Temperatures up to 650°F.
- 2" IPS – 405 at Temperatures up to 650°F.
- 1-1/4" CU – 194 at Temperatures up to 300°F.
- 1" CU 204 at Temperatures up to 300°F.
- 3/4" CU 218 PSI at Temperatures up to 300°F.

MAXIMUM PRESSURES AT OTHER TEMPERATURES  
ARE AVAILABLE UPON REQUEST.

### Pipe Water Capacities and Quantities Circulated at Velocity of 3 Feet Per Second

Nominal Pipe Size	Pipe I.D. (inches)	Gals Per Lin. Ft.	GPM @ 3' per sec Velocity
3/4" Copper	0.835	0.028	5.12
1" Copper	1.077	0.047	8.52
1 1/4" Copper	1.315	0.071	12.70
1" Steel	1.075	0.047	8.49
1 1/4" Steel	1.395	0.079	14.29
2" Steel	2.115	0.183	32.85



### Glycol Correction Factors

#### Fluid Temperature 200°F

% Solution	Ethylene Glycol	Propylene Glycol
20	.952	.988
30	.921	.968
40	.888	.943
50	.852	.912

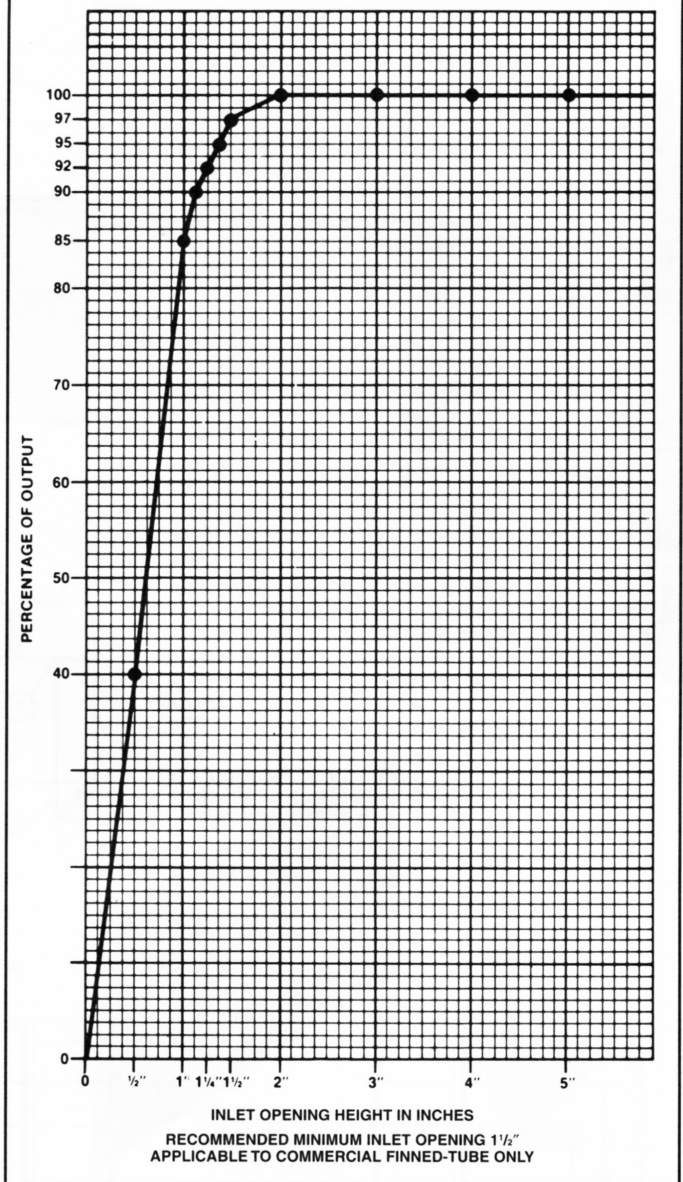
#### Fluid Temperature 180°F

% Solution	Ethylene Glycol	Propylene Glycol
20	.946	.982
30	.913	.961
40	.879	.934
50	.842	.902

#### Fluid Temperature 140°F

% Solution	Ethylene Glycol	Propylene Glycol
20	.934	.97
30	.898	.946
40	.861	.916
50	.821	.881

### INLET VS. OUTPUT/BTUH CAPACITY REDUCTION



### ALTITUDE FACTORS

Approximate factors for convective heat value at varying altitudes

Altitude	Ferrous Units	Copper Alum. Units
Sea Level	1.000	1.000
1,000 ft.	.984	.969
2,000 ft.	.968	.938
3,000 ft.	.952	.908
4,000 ft.	.936	.878
5,000 ft.	.920	.850
6,000 ft.	.904	.822
7,000 ft.	.889	.795
8,000 ft.	.874	.768
9,000 ft.	.859	.743
10,000 ft.	.844	.718
15,000 ft.	.771	.603
20,000 ft.	.703	.502