VERSA-LINE

Submittal

JVA-E / JVB-E
Versa-Line
Copper/Aluminum and
Steel Element Ratings

☐ **JVA Slip Jointed Enclosure**

Specification

☐ **JVB Slip Jointed Enclosure**

ENCLOSURE:

STYLE: Flat Top, Top Outlet
OUTLET: Stamped Louvers
Pencil Proof

LENGTHS: 2'0" thru 8'0" in 6" Increments
MAT'L: ☐ 18 Ga. CRS (Std)
☐ 16 Ga. CRS (Opt'l)
☐ 14 Ga. CRS (Opt'l)
☐ 18 Ga. Stainless Steel (Opt'l)
☐ 16 Ga. Stainless Steel (Opt'l)
☐ 14 Ga. Stainless Steel (Opt'l)
☐ 16 Ga. Aluminum (Opt'l)
☐ 14 Ga. Aluminum (Opt'l)
☐ 12 Ga. Aluminum (Opt'l)
HEIGHT: ☐ 5 ¾" (JVA only)
☐ 6 1/8" (JVB only)
☐ 11 3/4" (JVA only)
☐ 12 1/8" (JVB only)
FINISH: ☐ Baked Powder (Std)
☐ Baked Metallic (Opt'l)

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)

TYPE: ☐ IPS Steel (Mechanically Expanded)
LENGTHS: 2'0" thru 12'6" in 1" Increments
☐ NPT Thread both Ends (Std)
☐ Beveled Ends for Field Weld (Opt'l)

See Catalog for Working Pressures

BACKPLATE:

TYPE: ☐ Partial B/P
LENGTHS: 8'0" Only
MAT'L: ☐ 20 Ga. Prepainted (Std)
☐ 18 Ga. Galvannealed (Opt'l)

AIRSEAL:

☐ 1/8" x 3/8" Closed Cell (Opt'l)

BRACKETS:

☐ Water Brkt w/B.B.

DAMPER: Not Available

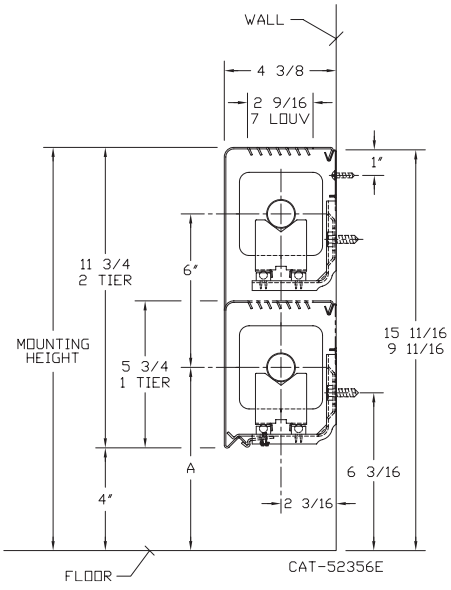
Not recommended for steam applications.
Consult factory

ACCESSORIES:

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

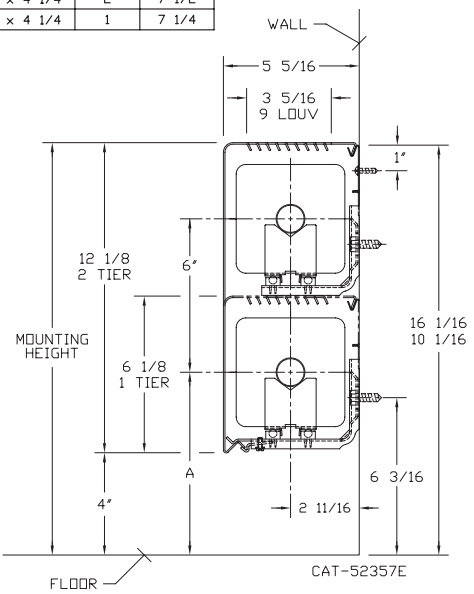
☐ JVA-E5 11

ELEMENT TUBE SIZE	FIN SIZE HEIGHT x WIDTH	CRADLE NUMBER	A
3/4 COPPER	3 1/4 x 3 1/4	2	7"
1" COPPER	3 1/4 x 3 1/4	2	7 3/16
1 1/4 COPPER	3 1/4 x 3 1/4	1	6 5/8
1" STEEL	3 1/4 x 3 1/4	2	7 5/16
1 1/4 STEEL	3 1/4 x 3 1/4	1	6 13/16



☐ JVB-E6 12

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



STERLING®
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MADE IN THE USA

1/20

PROJECT: _____ **DATE:** _____
LOCATION: _____
ARCHITECT: _____
ENGINEER: _____
CONTRACTOR: _____
PO NUMBER: _____

STYLE "JVA-E / JVB-E" VERSA-LINE

COPPER/ALUMINUM ELEMENTS

ALL RATINGS ARE IN BTU/HR/LIN FT AND BASED ON 3 FPS VELOCITY, 65° EAT

TUBE SIZE	CATALOG DESIGNATION	FIN SIZE HEIGHT X WIDTH	FINS PER FT.	FIN THICKNESS IN INCHES	ENCL DEPTH AND HEIGHT IN INCHES	TIERS AND CENTERS IN INCHES	MOUNTING HEIGHT IN INCHES	STEAM 215° FACTOR	HOT WATER (AVG.) 200°	190°	180°	170°	160°	150°	140°	130°	120°
									CORRECTION FACTORS FOR AVERAGE WATER TEMPERATURES								
								1.00	0.86	0.78	0.69	0.61	0.53	0.45	.40	.33	.26
3/4"	C3/4-33	3-1/4" SQ.	32	.020	5A	1	9-3/4	840	720	660	580	510	450	380	340	280	220
					11A	2-6 CL	15-3/4	1380	1190	1080	950	840	730	620	550	460	360
3/4"	C3/4-34	3-1/4" SQ.	40	.020	5A	1	9-3/4	970	830	760	670	590	510	440	390	320	250
					11A	2-6 CL	15-3/4	1490	1280	1160	1030	910	790	670	600	490	390
3/4"	C3/4-35	3-1/4" SQ.	50	.020	5A	1	9-3/4	980	840	760	680	600	520	440	390	320	250
					11A	2-6 CL	15-3/4	1440	1240	1120	990	880	760	650	580	480	370
1"	C33	3-1/4" SQ.	32	.020	5A	1	9-3/4	820	710	640	570	500	430	370	330	270	210
					11A	2-6 CL	15-3/4	1360	1170	1060	940	830	720	610	540	450	350
1"	C34	3-1/4" SQ.	40	.020	5A	1	9-3/4	950	820	740	660	580	500	430	380	310	250
					11A	2-6 CL	15-3/4	1470	1260	1150	1010	900	780	660	590	490	380
1"	C35	3-1/4" SQ.	50	.020	5A	1	9-3/4	960	830	750	660	590	510	430	380	320	250
					11A	2-6 CL	15-3/4	1470	1260	1150	1010	900	780	660	590	490	380
1-1/4"	C133	3-1/4" SQ.	32	.020	5A	1	9-3/4	780	670	610	540	480	410	350	310	260	200
					11A	2-6 CL	15-3/4	1320	1140	1030	910	810	700	590	530	440	340
1-1/4"	C134	3-1/4" SQ.	40	.020	5A	1	9-3/4	910	780	710	630	560	480	410	360	300	240
					11A	2-6 CL	15-3/4	1400	1200	1090	970	850	740	630	560	460	360
1-1/4"	C135	3-1/4" SQ.	50	.020	5A	1	9-3/4	920	790	720	630	560	490	410	370	300	240
					11A	2-6 CL	15-3/4	1380	1190	1080	950	840	730	620	550	460	360
3/4"	C3/4-433	3-5/8" x 4-1/4"	32	.020	6B	1	10-1/8	865	740	670	600	530	460	390	350	290	220
					12B	2-6 CL	16-1/8	1340	1150	1050	920	820	710	600	540	440	350
3/4"	C3/4-434	3-5/8" x 4-1/4"	40	.020	6B	1	10-1/8	1190	1020	930	820	730	630	540	480	390	310
					12B	2-6 CL	16-1/8	1900	1630	1480	1310	1160	1010	860	760	630	490
3/4"	C3/4-435	3-5/8" x 4-1/4"	50	.020	6B	1	10-1/8	1270	1090	990	880	770	670	570	510	420	330
					12B	2-6 CL	16-1/8	2060	1770	1610	1420	1260	1090	930	820	680	540
1"	C433	3-5/8" x 4-1/4"	32	.020	6B	1	10-1/8	1110	950	870	770	680	590	500	440	370	290
					12B	2-6 CL	16-1/8	1690	1450	1320	1170	1030	900	760	680	560	440
1"	C434	3-5/8" x 4-1/4"	40	.020	6B	1	10-1/8	1230	1060	960	850	750	650	550	490	410	320
					12B	2-6 CL	16-1/8	1960	1690	1530	1350	1200	1040	880	780	650	510
1"	C435	3-5/8" x 4-1/4"	50	.020	6B	1	10-1/8	1320	1140	1030	910	810	700	590	530	440	340
					12B	2-6 CL	16-1/8	1930	1660	1510	1330	1180	1020	870	770	640	500
1-1/4"	C1433	3-5/8" x 4-1/4"	32	.020	6B	1	10-1/8	1090	940	850	750	660	580	490	440	360	280
					12B	2-6 CL	16-1/8	1660	1430	1290	1150	1010	880	750	660	550	430
1-1/4"	C1434	3-5/8" x 4-1/4"	40	.020	6B	1	10-1/8	1210	1040	940	830	740	640	540	480	400	310
					12B	2-6 CL	16-1/8	1920	1650	1500	1320	1170	1020	860	770	630	500
1-1/4"	C1435	3-5/8" x 4-1/4"	50	.020	6B	1	10-1/8	1300	1120	1010	900	790	690	590	520	430	340
					12B	2-6 CL	16-1/8	1890	1630	1470	1300	1150	1000	850	760	620	490
3/4"	C3/4-43	4-1/4" SQ.	32	.020	6B	1	10-1/8	1200	1030	940	830	730	640	540	480	400	310
					12B	2-6 CL	16-1/8	1900	1630	1480	1310	1160	1010	860	760	630	490
3/4"	C3/4-44	4-1/4" SQ.	40	.020	6B	1	10-1/8	1600	1380	1250	1100	980	850	720	640	530	420
					12B	2-6 CL	16-1/8	2200	1890	1720	1520	1340	1170	990	880	730	570
3/4"	C3/4-45	4-1/4" SQ.	50	.020	6B	1	10-1/8	1330	1140	1040	920	810	700	600	530	440	350
					12B	2-6 CL	16-1/8	1880	1620	1470	1300	1150	1000	850	750	620	490
1"	C43	4-1/4" SQ.	32	.020	6B	1	10-1/8	1220	1050	950	840	740	650	550	490	400	320
					12B	2-6 CL	16-1/8	1920	1650	1500	1320	1170	1020	860	770	630	500
1"	C44	4-1/4" SQ.	40	.020	6B	1	10-1/8	1480	1270	1150	1020	900	780	670	590	490	380
					12B	2-6 CL	16-1/8	2010	1730	1570	1390	1230	1070	900	800	660	520
1"	C45	4-1/4" SQ.	50	.020	6B	1	10-1/8	1370	1180	1070	950	840	730	620	550	450	360
					12B	2-6 CL	16-1/8	1930	1660	1510	1330	1180	1020	870	770	640	500
1-1/4"	C143	4-1/4" SQ.	32	.020	6B	1	10-1/8	1200	1030	940	830	730	640	540	480	400	310
					12B	2-6 CL	16-1/8	1880	1620	1470	1300	1150	1000	850	750	620	490
1-1/4"	C144	4-1/4" SQ.	40	.020	6B	1	10-1/8	1330	1140	1040	920	810	700	600	530	440	350
					12B	2-6 CL	16-1/8	1970	1690	1540	1360	1200	1040	890	790	650	510
1-1/4"	C145	4-1/4" SQ.	50	.020	6B	1	10-1/8	1350	1160	1050	930	820	720	610	540	450	350
					12B	2-6 CL	16-1/8	1890	1630	1470	1300	1150	1000	850	760	620	490

Note: Copper tube furnished flared one end standard.

STYLE "JVA-E / JVB-E" VERSA-LINE

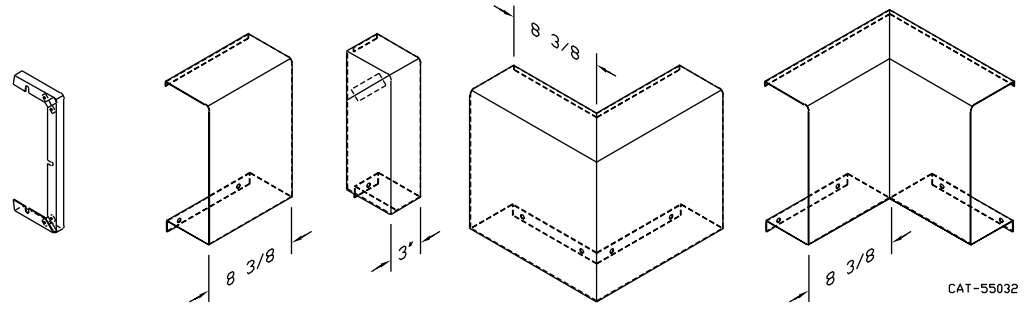
STEEL ELEMENTS

ALL RATINGS ARE IN BTU/HR/LIN FT AND BASED ON 3 FPS VELOCITY, 65° EAT

TUBE SIZE	CATALOG DESIGNATION	FIN SIZE HEIGHT X WIDTH	FINS PER FT.	FIN THICKNESS IN INCHES	ENCL DEPTH AND HEIGHT IN INCHES	TIERS AND CENTERS IN INCHES	MOUNTING HEIGHT IN INCHES	STEAM 215° FACTOR	HOT WATER (AVG.) 200°	190°	180°	170°	160°	150°	140°	130°	120°
									CORRECTION FACTORS FOR AVERAGE WATER TEMPERATURES								
								1.00	0.86	0.78	0.69	0.61	0.53	0.45	.40	.33	.26
1"	S33	3-1/4" SQ.	32	.032	5A	1	9-3/4	780	670	610	540	480	410	350	310	260	200
					11A	2-6 CL	15-3/4	1330	1140	1040	920	810	700	600	530	440	350
1"	S34	3-1/4" SQ.	40	.032	5A	1	9-3/4	860	740	670	590	520	460	390	340	280	220
					11A	2-6 CL	15-3/4	1475	1270	1150	1020	900	780	660	590	490	380
1"	S35	3-1/4" SQ.	50	.032	5A	1	9-3/4	910	780	710	630	560	480	410	360	300	240
					11A	2-6 CL	15-3/4	1550	1330	1210	1070	950	820	700	620	510	400
1-1/4"	S133	3-1/4" SQ.	32	.032	5A	1	9-3/4	770	660	600	530	470	410	350	310	250	200
					11A	2-6 CL	15-3/4	1320	1140	1030	910	810	700	590	530	440	340
1-1/4"	S134	3-1/4" SQ.	40	.032	5A	1	9-3/4	870	750	680	600	530	460	390	350	290	230
					11A	2-6 CL	15-3/4	1490	1280	1160	1030	910	790	670	600	490	390
1-1/4"	S135	3-1/4" SQ.	50	.032	5A	1	9-3/4	880	760	690	610	540	470	400	350	290	230
					11A	2-6 CL	15-3/4	1510	1300	1180	1040	920	800	680	600	500	390
1"	S43	4-1/4" SQ.	32	.032	6B	1	10-1/8	1095	940	850	760	670	580	490	440	360	280
					12B	2-6 CL	16-1/8	1850	1590	1440	1280	1130	980	830	740	610	480
1"	S44	4-1/4" SQ.	40	.032	6B	1	10-1/8	1215	1040	950	840	740	640	550	490	400	320
					12B	2-6 CL	16-1/8	1910	1640	1490	1320	1170	1010	860	760	630	500
1"	S45	4-1/4" SQ.	50	.032	6B	1	10-1/8	1300	1120	1010	900	790	690	590	520	430	340
					12B	2-6 CL	16-1/8	2150	1850	1680	1480	1310	1140	970	860	710	560
1-1/4"	S143	4-1/4" SQ.	32	.032	6B	1	10-1/8	1010	870	790	700	620	540	450	400	330	260
					12B	2-6 CL	16-1/8	1700	1460	1330	1170	1040	900	770	680	560	440
1-1/4"	S144	4-1/4" SQ.	40	.032	6B	1	10-1/8	1210	1040	940	830	740	640	540	480	400	310
					12B	2-6 CL	16-1/8	1900	1630	1480	1310	1160	1010	860	760	630	490
1-1/4"	S145	4-1/4" SQ.	50	.032	6B	1	10-1/8	1280	1100	1000	880	780	680	580	510	420	330
					12B	2-6 CL	16-1/8	2135	1840	1670	1470	1300	1130	960	850	700	560
2"	S242	4-1/4" SQ.	25	.032	6B	1	10-1/8	950	820	740	660	580	500	430	380	310	250
					12B	2-6 CL	16-1/8	1620	1390	1260	1120	990	860	730	650	530	420
2"	S243	4-1/4" SQ.	32	.032	6B	1	10-1/8	1130	970	880	780	690	600	510	450	370	290
					12B	2-6 CL	16-1/8	1770	1520	1380	1220	1080	940	800	710	580	460

Notes: 1) Steel fins furnished as .032 thick, painted black.
2) NPT threads furnished on steel elements. Please use domestic fittings for proper installation.
3) The ends can be provided chamfered for field welded fittings when specified.

STYLE E ACCESSORIES



Design Data

Correction Factor Chart for Non-Standard Mounting Heights

MOUNTING HEIGHT (Inches)	ENCLOSURE STYLE						
	BARE FIN ALL SIZES	FRONT OUTLET	FT (FRONT & TOP)		SLOPE		
			3 1/4" FINS	4 1/4" FINS	2 3/4" FINS	3 1/4" FINS	4 1/4" FINS
40 or more	1.000	1.000	1.000	1.000	1.000	1.000	1.000
38	1.000	1.000	1.000	1.000	1.000	1.000	1.003
36	1.000	1.004	1.005	1.005	1.006	1.007	1.009
34	1.010	1.014	1.011	1.010	1.012	1.013	1.016
32	1.020	1.024	1.017	1.015	1.019	1.020	1.025
30	1.030	1.039	1.029	1.024	1.031	1.033	1.039
29	1.040	1.049	1.035	1.029	1.038	1.040	1.045
28	1.050	1.059	1.041	1.034	1.045	1.047	1.052
27	1.060	1.069	1.046	1.039	1.051	1.053	1.059
26	1.070	1.079	1.052	1.044	1.058	1.060	1.065
25	1.080	1.089	1.058	1.049	1.065	1.067	1.072
24	1.090	1.099	1.064	1.054	1.071	1.073	1.079
23	1.100	1.109	1.070	1.059	1.078	1.080	1.085
22	1.110	1.119	1.076	1.064	1.085	1.087	1.092
21	1.120	1.129	1.082	1.069	1.091	1.093	1.099
20	1.130	1.139	1.088	1.074	1.098	1.100	1.100
19	1.140	1.149	1.089	1.075	1.100	1.100	1.100
18 or less	1.150	1.150	1.089	1.075	1.100	1.100	1.100

TOP OUTLET "T" IS NOT AFFECTED.

The AHRI Ratings cataloged include the factor shown for the recommended mounting height.

If the unit is to be installed at a different height than that recommended, the AHRI Rating (except for Top Outlet) must be adjusted as follows: AHRI Rating multiplied by

$$\frac{\text{Factor from Table Above for actual mounting height}}{\text{Factor from Table Above for recommended mounting height}}$$

FORMULA:

$$\text{Catalog Rating} \times \frac{\text{Factor at 30" Height}}{\text{Factor at 18" Height}}$$

SOLUTION: $1950 \times \frac{1.039}{1.150} = 1760$ BTU/Hr.

DYNAMIC FORMULAS

$$BTU = GPM \times 500 \times TD$$

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

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

Design Data

COMMERCIAL FINNED TUBE RATING CORRECTION CHARTS

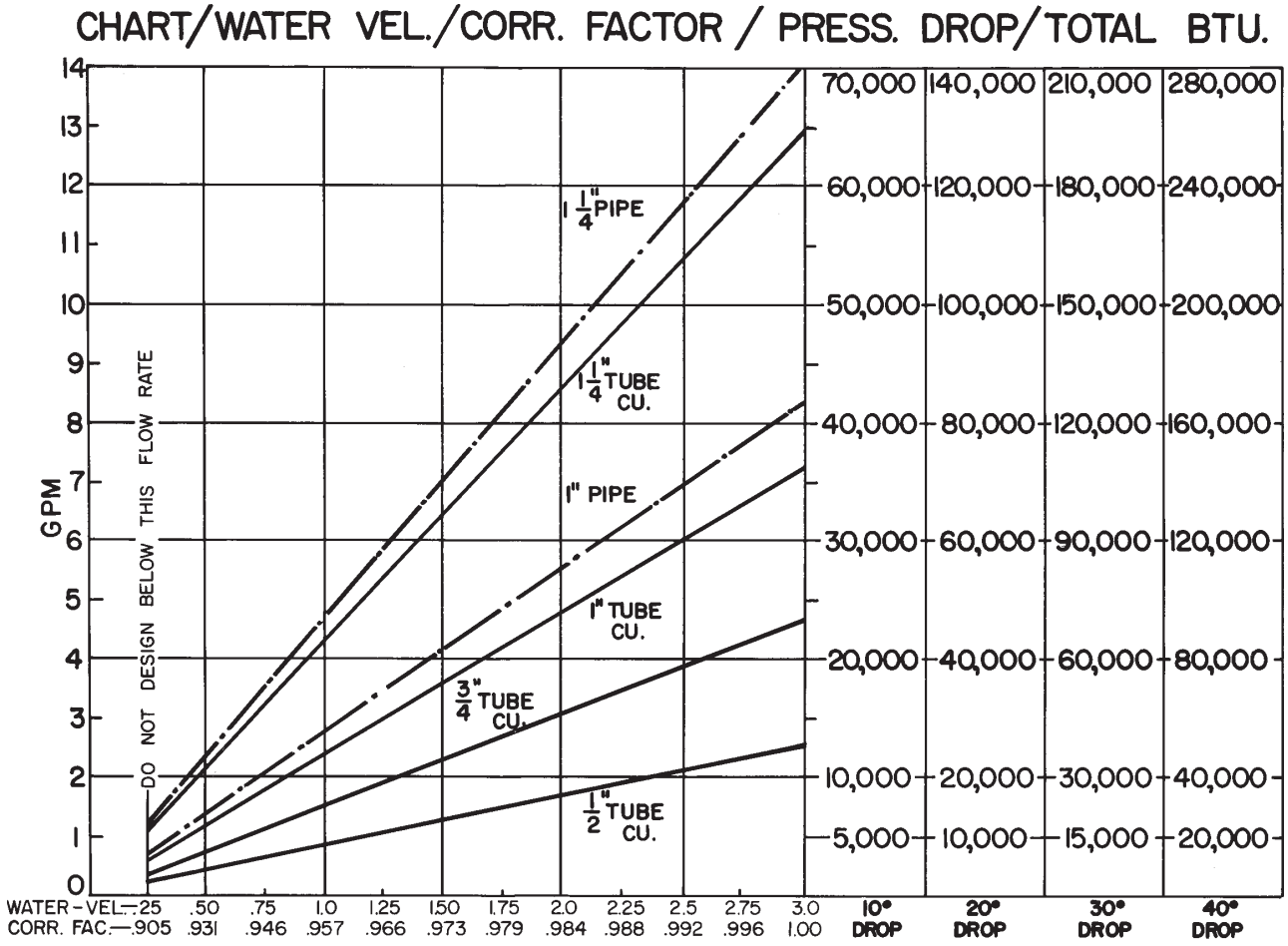
CATALOG FINNED TUBE RATINGS ARE BASED UPON THE FOLLOWING CONDITIONS:

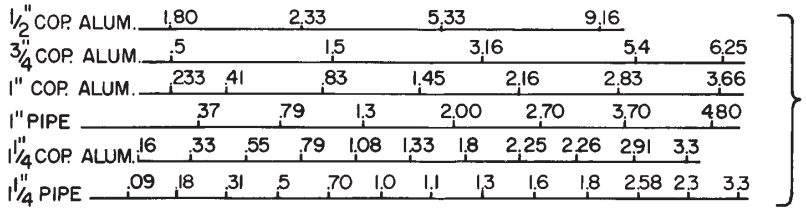
- **215°F AVERAGE WATER OR STEAM TEMPERATURE**
- **65°F ENTERING AIR TEMPERATURE**
- **3 FEET PER SECOND WATER FLOW RATE**
- **CATALOG MOUNTING HEIGHT**

USE THE FOLLOWING CALCULATION WITH CORRECTION FACTORS FOR JOB CONDITIONS TO DETERMINE CORRECTED RATING:

CORRECTED RATING = (215°F CATALOG RATING) X (CORRECTION FACTOR FOR STEAM OR WATER AND AVERAGE AIR TEMP.) X (CORRECTION FACTOR FOR FLOW RATE) X (CORRECTION FOR MOUNTING HTG.-SEE CATALOG RATING)

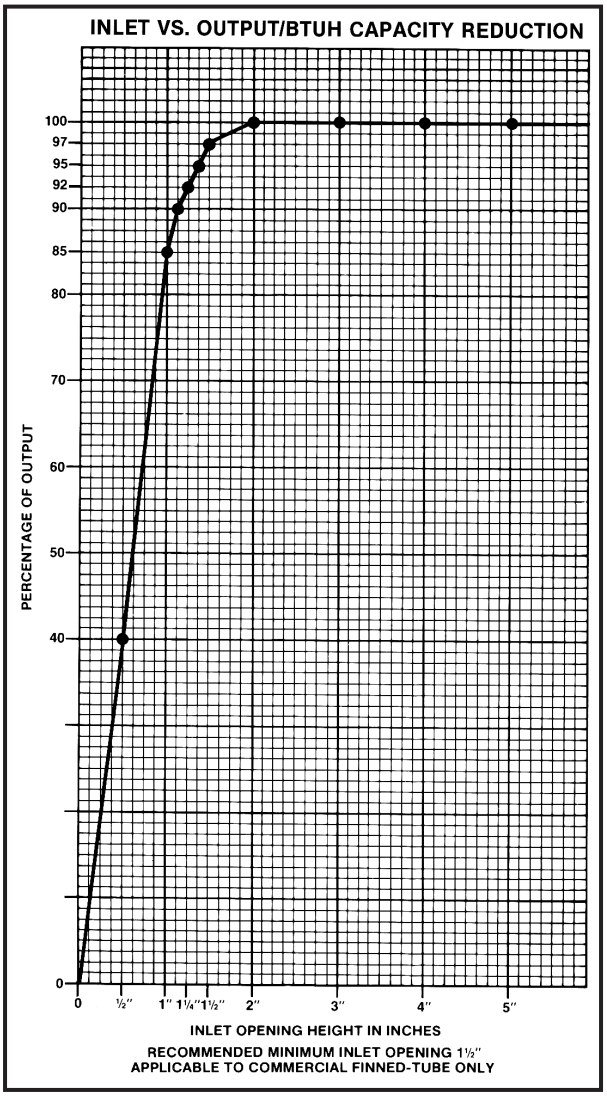
USE THE FOLLOWING CHARTS TO SELECT CORRECTION FACTORS





Design Data

INLET AIR CORRECTION FACTOR



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

GUARANTEED WORKING PRESSURES

1" IPS — 780 AT TEMPERATURES UP TO 650°F.
1¼" IPS — 660 AT TEMPERATURES UP TO 650°F.
2" IPS — 405 AT TEMPERATURES UP TO 650°F.
1¼" CU — 194 AT TEMPERATURES UP TO 300°F.
1" CU — 204 AT TEMPERATURES UP TO 300°F.
¾" CU — 218 PSI AT TEMPERATURES UP TO 300°F.

MAXIMUM PRESSURES AT OTHER TEMPERATURES ARE AVAILABLE UPON REQUEST.

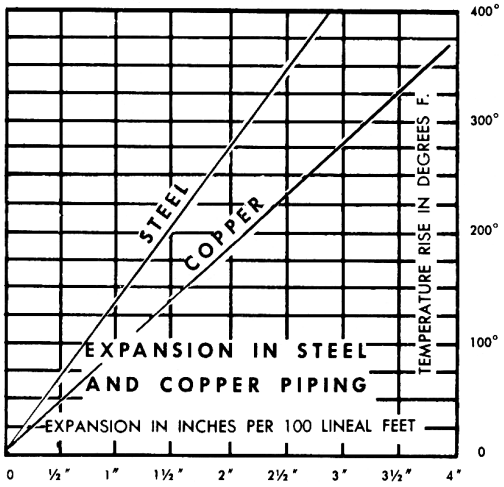
RATE OF PITCH FOR STEAM 1/2" DROP OVER 20 FT. RUN.

PIPE WATER CAPACITIES AND QUANTITIES CIRCULATED AT VELOCITY OF 3* FEET PER SECOND

Pipe Size	Gals. Per Linear Ft.	Gals./Min. @ 3′ Sec. Vel.*	Lbs./Hr. @ 3′ Sec. Vel.*
½″	.016	2.88	1440
¾″	.023	4.14	2070
1″	.040	7.20	3600
1¼″	.063	11.34	5660
1½″	.102	18.36	9160
2″	.170	30.60	15300
2½″	.275	49.50	24850
3″	.390	70.20	35000

*3 Ft./Sec. Velocity is Basic for Hot Water Rating Factors Shown on this Page.

$$\text{VELOCITY FT./SEC.} = \frac{\text{LBS. PER HOUR}}{(\text{GALS. PER FT.})\ (3600)\ (8.3)}$$



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

Design Data

CORRECTION FACTORS FOR STEAM PRESSURES AND AIR TEMPERATURES OTHER THAN STANDARD

STEAM		▼ ENTERING AIR TEMPERATURE, °F														
Pressure		Temp.			STD											
Gauge	Abs. Psi	°F	45	55	65	70	75	80	85	90	100	110	120	130	140	150
(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″	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″	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
(Vac) 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	258.8	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.**

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