

ARMSTRONG INTERNATIONAL—INTELLIGENT SYSTEM SOLUTIONS™

www.armstronginternational.com

Steam Specialties

Steam traps, pressure reducing valves, temperature regulators, radiator traps and valves, air vents, and strainers.

Steam-A-Ware™

Sizing and selection software for steam, air, and hot water systems.

Condensate Recovery Systems

Non-electric pumping traps, condensate pump trap packages, and flash recovery vessels.

Hot Water Systems

Flo-Rite-Temp™ Steam to water instantaneous heaters, Flo-Direct™ 99.7% thermal efficient gas fired.

Washdown Equipment

Steamix® Hose Stations—steam and water mixing, hot and cold water mixing, hoses, nozzles, and accessories.

Coils

Steam and liquid heating/cooling coils. Finned tube, plate fin, unit heaters and tank heaters.

Humidification

Direct steam injection, gas fired, electronic, fogging, and steam to steam humidifiers.

Humid-A-Ware™

Sizing and selection software for steam gas fired, electronic, and fogging humidification systems.

CHECK-ALL VALVE www.checkall.com

Engineered spring-loaded check valves—1/8" – 20" bronze, carbon steel, nylon, PVC, stainless steel, Teflon® and other alloys, pressure ratings from vacuum to 10,000 psi, wide range of springs and seats.

CONTROL SOUTHEAST, INC. www.ametek.com

Thermal solution provider of jacketed piping, tracing technology, and heating/cooling jacketing.

DONALDSON FILTRATION SOLUTIONS www.donaldsonprocessfiltration.com

A premier manufacturer of process filter housings and elements for steam, gas, liquids, or compressed air.

ENERQUIP www.enerquip.com

Shell and tube heat exchangers for food and beverage, pharmaceutical, and industrial applications.

KEL TECH INC. www.keltechinc.com

Manufacturer of electric tank less water heaters.

LATTNER BOILER COMPANY www.lattnerboiler.com

Steam and hot water boilers—HRT, firetube and vertical tubeless designs and electric boilers. Condensate feedwater and blowdown systems.

DRS MARLO COIL www.marlocoil.com

Heating and cooling coils, "stratomizer" face, and bypass coils.

RADA CONTROLS www.us.radacontrols.com

A line of revolutionary digital thermostatic faucets and showers designed for ever increasing risk of waterborne pathogens in the healthcare and institutional markets.

SHANNON ENTERPRISES www.blanket-insulation.com

Engineered Blanket insulation solutions for maximum thermal management and accoutstic optimization

SHIPCO www.shipcopumps.com

Condensate handling equipment, boiler feed units, deaerators, and vacuum units.

THRUSH www.thrushco.com

In-line circulators, close coupled, vertical in-line pumps and heat exchangers: double wall, straight and U-tube, and replacement bundles.

CIRCLE S PRODUCTS, INC. www.dryflo.com

Steam and air separators, exhaust heads, and flash tanks.



Use this table to:

- Convert steam temperature from steam pressure
- Convert steam pressure to saturated temperature
- Determine Btu/lb of steam at a given pressure
- Determine the Btu/lb of condensate at a given pressure and temperature
- Determine the specific volume (cu ft/lb) of steam at a given pressure

Table CG-1. Properties of Saturated Steam
(Abstracted from Keenan and Keyes, THERMODYNAMIC PROPERTIES OF STEAM, by permission of John Wiley & Sons, Inc.)

	Col.1 Gauge Pressure	Col.2 Absolute Pressure (psia)	Col.3 Steam Temp. (°F)	Col.4 Heat of Sat. Liquid (Btu/lb)	Col.5 Latent Heat (Btu/lb)	Col.6 Total Heat of Steam (Btu/lb)	Col.7 Specific Volume of Sat. Liquid (cu ft/lb)	Col.8 Specific Volume of Sat. Steam (cu ft/lb)
Inches of Vacuum	29.743	0.08854	32.00	0.00	1075.8	1075.8	0.016022	3306.00
	29.515	0.2	53.14	21.21	1063.8	1085.0	0.016027	1526.00
	27.886	1.0	101.74	69.70	1036.3	1106.0	0.016136	333.60
	19.742	5.0	162.24	130.13	1001.0	1131.0	0.016407	73.52
	9.562	10.0	193.21	161.17	982.1	1143.3	0.016590	38.42
	7.536	11.0	197.75	165.73	979.3	1145.0	0.016620	35.14
	5.490	12.0	201.96	169.96	976.6	1146.6	0.016647	32.40
	3.454	13.0	205.88	173.91	974.2	1148.1	0.016674	30.06
	1.418	14.0	209.56	177.61	971.9	1149.5	0.016699	28.04
PSIG	0.0	14.696	212.00	180.07	970.3	1150.4	0.016715	26.80
	1.3	16.0	216.32	184.42	967.6	1152.0	0.016746	24.75
	2.3	17.0	219.44	187.56	965.5	1153.1	0.016768	23.39
	5.3	20.0	227.96	196.16	960.1	1156.3	0.016830	20.09
	10.3	25.0	240.07	208.42	952.1	1160.6	0.016922	16.30
	15.3	30.0	250.33	218.82	945.3	1164.1	0.017004	13.75
	20.3	35.0	259.28	227.91	939.2	1167.1	0.017078	11.90
	25.3	40.0	267.25	236.03	933.7	1169.7	0.017146	10.50
	30.3	45.0	274.44	243.36	928.6	1172.0	0.017209	9.40
	40.3	55.0	287.07	256.30	919.6	1175.9	0.017325	7.79
	50.3	65.0	297.97	267.50	911.6	1179.1	0.017429	6.66
	60.3	75.0	307.60	277.43	904.5	1181.9	0.017524	5.82
	70.3	85.0	316.25	286.39	897.8	1184.2	0.017613	5.17
	80.3	95.0	324.12	294.56	891.7	1186.2	0.017696	4.65
	90.3	105.0	331.36	302.10	886.0	1188.1	0.017775	4.23
	100.0	114.7	337.90	308.80	880.0	1188.8	0.017850	3.88
	110.3	125.0	344.33	315.68	875.4	1191.1	0.017922	3.59
	120.3	135.0	350.21	321.85	870.6	1192.4	0.017991	3.33
	125.3	140.0	353.02	324.82	868.2	1193.0	0.018024	3.22
	130.3	145.0	355.76	327.70	865.8	1193.5	0.018057	3.11
	140.3	155.0	360.50	333.24	861.3	1194.6	0.018121	2.92
	150.3	165.0	365.99	338.53	857.1	1195.6	0.018183	2.75
	160.3	175.0	370.75	343.57	852.8	1196.5	0.018244	2.60
	180.3	195.0	379.67	353.10	844.9	1198.00	0.018360	2.34
	200.3	215.0	387.89	361.91	837.4	1199.3	0.018470	2.13
	225.3	240.0	397.37	372.12	828.5	1200.6	0.018602	1.92
	250.3	265.0	406.11	381060	820.1	1201.7	0.018728	1.74
		300.0	417.33	393.84	809.0	1202.8	0.018896	1.54
		400.0	444.59	424.00	480.5	1204.5	0.019340	1.16
		450.00	456.28	437.20	767.4	1204.6	0.019547	1.03
		500.0	467.01	449.40	755.0	1204.4	0.019748	0.93
		600.0	486.21	471.60	731.6	1203.2	0.02013	0.77
	900.0	531.98	526.60	668.8	1195.4	0.02123	0.50	
	1200.0	567.22	571.70	611.7	1183.4	0.02232	0.36	
	1500.0	596.23	611.60	556.3	1167.9	0.02346	0.28	
	1700.0	613.15	636.30	519.6	1155.9	0.02428	0.24	
	2000.0	635.82	671.70	463.4	1135.1	0.02565	0.19	
	2500.0	668.13	730.60	360.5	1091.1	0.02860	0.13	
	2700.0	679.55	756.20	312.1	1068.3	0.03027	0.11	
	3206.2	705.40	902.70	0.0	902.7	0.05053	0.05	

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