

HVAC, Plumbing and General Industrial Products

FH LINE CARD

Pumps, Pumping Systems and Hydronic Accessories – Circulators, Pumps (Inline, End Suction, Split Case, Boiler Feed, Vertical Turbine, Sump, Sewage Ejector), Air Control & Elimination Systems, Expansion Tanks, Pump Protection Products, Packaged Pressure Booster & Variable Speed Pumping.



Boilers – High Efficiency Copper Tube Boilers & Water Heaters, Eutectic Cast Iron Boilers, High Efficiency Wall Hung Boilers & Water Heaters.



Heat Transfer Products – Heat Exchangers (Shell and Tube, Plate & Frame, Brazed, Refrigerant Condensers & Evaporators), Refrigerant Desuperheaters, Heating & Cooling Coils, Fluid Coolers, Cooling Towers, Evaporative Coolers, Fan Coil Units, Radiant In-Floor Systems and Accessories.



Environmental Products

Commercial/Industrial Water Heaters – Semi Instantaneous and Storage Type Water Heaters.



Steam and Condensate Handling Products – Condensate Pumps, Boiler Feed Pumps, Pressure Motive Pumps, Vacuum Pumps, Dearators, Pressure & Temperature Regulators, Steam Traps, Strainers, Flash Tanks, Steam Accessories.



Vibration Control and Pipe Motion Control Products – Vibration Isolators, Spring Roof Curbs, Flexible Pipe Connectors, Flexible Metal Hose, Seismic Isolation, Expansion Joints, Piping Ball Joints, Pipe Guides.



HVAC, Plumbing and General Industrial Products [cont.]

Water Quality and Filtration Products – Centrifugal Separators, Disc Filters, Screen Filters, Sand Filters, Transfer Valves.



Controls and Instrumentation – Control Valves, Constant Flow Regulators, Balancing Valves, Boiler Controls, Zone Control Products, Flow & Level Switches, Radiant Control Products, Flow Meters, Thermometers and Gauges, P/T Plugs.



TEXAS FAIRFAX COMPANY



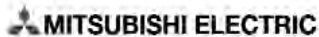
tekmar®



Pressure Vessels and Tanks



Motor Control Products – Motor Starters, Contactors, Variable Frequency Drives, VFD Bypass Systems, VFD Transfer Switches, Custom Control Panels.

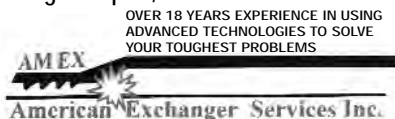


Power, Process, and Boiler Products

Steam Turbines and Turbine Generator Sets, Portable Blowers – Back Pressure Turbines, Condensing and Extraction Turbines, Turbine Generator Sets.

DRESSER-RAND COPPUS/DRESSER-RAND/MURRAY/NADROWSKI/TERRY

Heat Transfer Products – Heat Exchangers (Shell & Tube, Plate and Frame, Brazed, Spiral, Heating & Cooling Coils, Fin-Fan Units), Steam Condensers, Heat Exchanger Repair, Electric Heaters.



Power, Process, and Boiler Products [cont.]

Boilers and Thermal Fluid Heaters – Steam Boilers, Hot Water Boilers, Thermal Fluid Heaters, Fired Superheaters



UNILUX
ADVANCED MANUFACTURING



VAPOR POWER INTERNATIONAL

RENTECH
Boiler Systems, Inc.

Burners – Burners for Boiler and Process Applications



Economizers and Stack Heat Recovery – Stack Economizers, Condensing Heat Recovery Systems



Boiler Room Accessories – Combustion Gas Analyzers and Chimneys

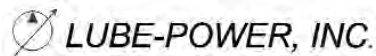


ROSEMOUNT[®]
Analytical



RENTECH
Boiler Systems, Inc.

Pressure Lube Systems



Metal and Fabric Expansion Joints



High-Speed Gear Boxes and Couplings

FLENDER
GRAFFENSTADEN

Useful Tables and Formulas

CONVERSION FACTORS

MULTIPLY	BY	TO OBTAIN
Cubic Feet	7.48	Gallons
Gallons of Water	8.345	Lbs. of Water
Gallons of Water	0.1337	Cubic Feet
Feet of Water	0.432	PSI
Horsepower	33,000	Foot - Lbs.
Horsepower	0.746	KW
Horsepower	2545	Btu/hr
Horsepower (Boiler)	33,493	Btu/hr
In. of Mercury	1.13	Feet of Water
Kilograms	2.2	Pounds
KW	3413	Btu/hr
Liters	0.2642	Gallons
Parts/million	0.0584	Grains/US gal
Pounds	7,000	Grains
Pounds/sq. inch	2.036	Inches Mercury
Square Foot EDR	240	Btuh
TO OBTAIN	BY	DIVIDE

CONDENSATE PUMP SIZING

PUMPS:

1. Heating Load in Btu/hr _____
2. Load from Step 1 ÷ Latent Heat of available steam = _____ #/hr of condensate
3. #/hr condensate ÷ 500 = _____ GPM of condensate
4. Recommended Pump Capacity = _____ (2.5 or 3.0) x Step 3 = _____ GPM
5. Pump Head = _____
 Static Lift in Feet _____
 + Friction Losses in Feet _____
 + Pressure in vessel that pump is pumping to _____ PSIG x 2.31 = _____
 = Total head required of pump = _____ Feet

RECEIVER: (Minimum)

Condensate:

1 minute x GPM from Step 4 = _____ Gallons

Boiler Feed:

1 Boiler Horsepower = 1 Gallon receiver cap. (gross)

Capacity of Cylindrical Tank (U.S. Gal.) =

diameter (in feet) squared x length (in feet) x 5.88

CALCULATING HEAT EXCHANGE LOADS

$$Q = 500 \times \text{GPM} \times (T_2 - T_1) \times \text{SP HT} \times \text{SP GR}$$

Typical Values for SP HT and SP GR:

Fluid	At 20° F		At 200° F	
	SP HT	SP GR	SP HT	SP GR
Water	*	*	1.0	1.0
50% Eth Gly	.75	1.08	.87	1.02
40% Eth Gly	.81	1.06	.90	1.01
50% Prop Gly	.84	1.06	.92	.99
40% Prop Gly	.88	1.05	.95	.98
SAE 30 Oil	.41	.91	.52	.84
#6 Fuel Oil	.40	1.0	.49	.94
Soybean Oil	.41	.94	.51	.87
Therminol 66	.36	1.03	.44	.96

* Use 1.0 for temperatures of 32°F to 212°F.

PROPERTIES OF SATURATED STEAM

Gauge Press. (lbs.)	Temp °F	Lat. Heat	Gauge Press. (lbs.)	Temp. °F	Lat. Heat
2	219	965	90	331	885
5	227	960	100	338	880
10	239	952	125	353	868
15	250	945	150	366	857
20	259	939	175	377	847
25	267	933	200	388	838
30	274	928	225	397	830
40	287	919	250	406	822
50	298	911	275	414	812
60	307	904	300	422	805
70	316	897	325	429	797
80	324	891	350	436	786

USEFUL INFORMATION

Pump Hp =

$$\frac{(\text{GPM} \times \text{Ft Head} \times \text{SP Gr})}{3960 \times \text{Pump Efficiency}}$$

Temperature Conversion

Temperature Conversion

$$^{\circ}\text{F} = (^{\circ}\text{C} \times 9/5) + 32 \quad ^{\circ}\text{C} = (^{\circ}\text{F} - 32) \times 5/9$$