

Appendix D – Heat Exchanger Selection

This appendix contains the cut sheets and other data for the Bell & Gossett heat exchanger used as a part of the design process.

Please see the all the heat exchanger information on the following pages.



10901 Pump House Road Annapolis Junction, Md 20701
Washington: 301-953-9370 Baltimore: 410-792-4230 Fax: 301-490-7156

To: Nathan

Job Name: Thesis

4/1/06

Engineer:

Quote Number:

***** Quotation ***** Quotation *****

Item	Quantity	Description	Unit Price	Extended Price
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Heat Exchanger

1)	1	Bell & Gossett Plate And Frame Heat Exchanger Model: P41 Side # 1: 777 GPM @ 54 F. EWT to 44 F. LWT Side # 2: 1300 GPM @ 42 F. EWT to 48 F. LWT Shipping Weight: 3352 lbs.		
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Total Price Items \$ 28,150.00
Full Freight Allowed

Cummins - Wagner Is Only Responsible For The Quantities And Materials Of Construction Listed.
The Material Listed Is Our Interpretation Of The Requirements.

Quotation Is Valid For Thirty (30) Days

Subject To Owner's Approval.

Att.

Item 3

Ref.

PHE-Type	P41-260-TMTL-70	Hot side	Cold side
Flowrate	(g.p.m.)	777.18	1300.00
Inlet temperature	(°F)	54.00	42.00
Outlet Temp. Cond./Fluid	(°F)	44.00	47.97
Pressure drop	(PSI)	3.77	10.08
Heat exchanged	(Btu/h)	3900000	
Thermodynamic properties:		Water	Water
Density	(Lb/Ft³)	62.37	62.39
Specific heat	(Btu/Lb*F)	1.00	1.00
Thermal conductivity	(Btu/h*Ft*F)	0.34	0.33
Mean viscosity	(cP)	1.34	1.44
Wall viscosity	(cP)	1.44	1.34
LMTD	(°F)		3.7
Excess Surface	(%)		0.0
Inlet branch		F1	F3
Outlet branch		F4	F2
Design of Frame / Plates:			
Plate arrangement (passes*channe		1 x 129 + 0 x 0	1 x 130 + 0 x 0
Number of plates		260	
Effective heat surface	(Ft²)	1,194.15	
Overall K-value Duty/Clean	(Btu/Ft²*h*F)	892 / 892	
Plate material		0.0157 inch AISI 304	▼
Gasket material		NITRIL LOCK	▼
Max. working temperature	(°F)	257	
Working/test pressure	(PSI)	150.0 / 195.0	
Frame type		IS	
Connections HOT side		6.00 " Unlined studded port, 150 # ANSI	▼
Connections COLD side		6.00 " Unlined studded port, 150 # ANSI	▼
Liquid volume	(Ft³)	11.43	
Carry Bar Length	(Ft)	6.56	Max. No. of Plates 300
Net weight	(Lb)		
		Approval	ASME code