

Heat Exchanger Specification Sheet

Company: Process Engineering Associates, LLC



Location:

Rev Note: Initial Process Data to Heat Exchange Design. Flows are from HMB Process Flow Stream Table with no design factor applied.

Service of Unit: Corn Oil Feed Preheater

Item No.: HTFdEflHtr Ref JET

Date: 04/02/09 Rev Job 020908-C

Size: ft Type S&T Connected in parallel series

Surf/unit(eff.) ft2 Shells/unit Surf/shell (eff.) ft2

PERFORMANCE OF ONE UNIT

	HOT		COLD	
	HT Effluent		Oil Feed	
Fluid allocation				
Fluid name				
Fluid quantity, Total	lb/h	3,330		2,669
Vapor (In/Out)	lb/h	3,303	1,909	
Liquid (In/Out)	lb/h	27	1,422	2,669
Noncondensable	lb/h			
Temperature (In/Out)	F	685	533	79
Dew / Bubble point	F			483
Liquid Density	lb/ft3	0.3	16.1	55.8
Vapor Density	lb/ft3	0.499	0.339	46.3
Liquid Viscosity	cP	0.776	0.29	67.56
Vapor Viscosity	cP	0.016	0.015	1.70
Molecular wt, Vap		11	7	
Molecular wt, NC				
Liquid Specific heat	Btu/lb F	0.01	0.32	0.46
Vapor Specific heat	Btu/lb F			0.77
Liquid Thermal conductivity	Btu/hr-ft2-F	0.083	0.060	0.098
Vapor Thermal conductivity				0.093
Latent heat	Btu/lb	700	458	1,188
Pressure	psig	542.07	541.1	587.6
Velocity	ft/sec			582.6
Pressure drop, allow./calc.	psig			
Fouling resist. (min)	hr-ft2-F/Btu	0.002		0.0010
Heat exchanged	MMBtu/h	0.67	MTD corrected	F
Transfer rate, Service		Dirty	Clean	BTU/(h*12°F)

Note to Heat Exchanger Design
 Normal Process Duty Required
 0.67 MMBtu/hr

CONSTRUCTION OF ONE SHELL

		Shell Side	Tube Side	Sketch
Design/Test pressure	psig	/	/	
Design temperature	F			
Number passes per shell				
Corrosion allowance	in			
Connections	In	/	/	
Size/rating	Out	/	/	
	Intermediate	/	/	
Tube No.	OD	in	Length	ft
Tube type		Material		Pitch
Shell	ID	OD	in	Tube pattern
Channel or bonnet				Shell cover
Tubesheet-stationary				Channel cover
Floating head cover				Tubesheet-floating
Baffle-crossing	Type	Cut(%d)	Spacing: c/c	Impingement protection
Baffle-long	Seal type			
Supports-tube	U-bend	Type		Inlet
Bypass seal		Tube-tubesheet joint		
Expansion joint	Type			
RhoV2-Inlet nozzle	Bundle entrance		Bundle exit	lb/(ft*c2)
Gaskets - Shell side	Tube Side			
Floating head				
Code requirements		TEMA class		
Weight/Shell	Filled with water		Bundle	lb
Remarks				