HEAT EXCHANGER SPECIFICATION SHEET

Released to the following HTRI Member Company:
WCE
RLZ

US_AP Units

Customer					Job No.				
Address					Reference No.				
Plant Location					Proposal No.				
Service of Unit	DEBUTANIZER REBOILER				Date	2022/11/14		Rev	03
Size	29 x 72 inch	Type	BEU	Horizontal	Item No.	18-X-381_Case Jet EOR_HLL			
Surf/Unit (Gross/Eff)	617.32 / 568.11 ft2	Shell/Unit	1		Connected In	1	Parallel	1	Series
					Surf/Shell (Gross/Eff)	617.32 / 568.11 ft2			

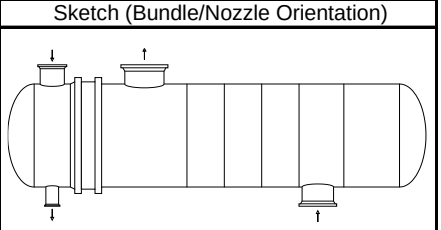
PERFORMANCE OF ONE UNIT

Fluid Allocation		Shell Side		Tube Side	
Fluid Name		Hydrocarbons		MP Steam	
Fluid Quantity, Total	lb/hr	196804		3467.6	
Vapor (In/Out)		1.5625	44972	3467.6	
Liquid		196802	151832		3467.6
Steam				3467.6	
Water					3467.6
Noncondensables					
Temperature (In/Out)	F	244.60	250.29	328.20	299.08
Specific Gravity		0.5298	0.5293		0.9201
Viscosity	cP	0.1140	0.0090 V/L 0.1140	0.0146	0.1846
Molecular Weight				18.02	18.02
Molecular Weight, Noncondensables					
Specific Heat	Btu/lb-F	0.6990	0.5340 V/L 0.7021	0.5333	1.0714
Thermal Conductivity	Btu/hr-ft-F	0.0440	0.0136 V/L 0.0440	0.0181	0.3953
Latent Heat	Btu/lb	116.61	115.88	1776.4	1776.4
Inlet Pressure	psig	99.607		50.000	
Velocity	ft/sec	5.63		7.33	
Pressure Drop, Allow/Calc	psi	1.900	2.037	5.000	0.033
Fouling Resistance (min)	ft2-hr-F/Btu	0.00200		0.00050	

Heat Exchanged	6.2152 MM Btu/hr			MTD (Corrected)	52.4 F
Transfer Rate, Service	208.87 Btu/ft2-hr-F	Clean	539.94 Btu/ft2-hr-F	Actual	221.58 Btu/ft2-hr-F

CONSTRUCTION OF ONE SHELL

Sketch (Bundle/Nozzle Orientation)



			Shell Side	Tube Side
Design/Test Pressure		psig	180.00 /	232.00 /
Design Temperature		F	330.00	430.00
No Passes per Shell			1	2
Corrosion Allowance		inch	0.1250	0.1250
Connections	In	inch	1 @ 7.6250	1 @ 6.0000
Size &	Out	inch	1 @ 9.7500	1 @ 3.0000
Rating	Intermediate		@	@

Tube No.	262U	OD	0.7500	inch	Thk(Avg)	0.0913	inch	Length	72.000	in	Pitch 1.0000 inch
Tube Type	Plain				Material	SA-179 Tube (S) K01200					Tube pattern 90
Shell	SA-516 70 Pl. K02700		ID	29.000	OD	29.750	inch	Shell Cover	SA-516 70 Pl. K02700		(Integ.)
Channel or Bonnet	SA-516 70 Pl. K02700							Channel Cover			
Tubesheet-Stationary	SA-105 Forgings K03504							Tubesheet-Floating			
Floating Head Cover								Impingement Plate	Rods		
Baffles-Cross	Carbon steel		Type	Single-Seg.	%Cut (Diam)	24.1	Spacing(c/c)	10.250	Inlet	10.250	inch
Baffles-Long					Seal Type	None					
Supports-Tube					U-Bend	Carbon steel				Type	Full support
Bypass Seal Arrangement	4 pairs seal strips				Tube-Tubesheet Joint	Expanded and seal welded (2 grooves)					
Expansion Joint					Type	None					
Rho-V2-Inlet Nozzle	898.97 lb/ft-sec2				Bundle Entrance	788.91	Bundle Exit	847.59	lb/ft-sec2		
Gaskets-Shell Side	Mach. Mtl. (Kammprofile\Flex. Face)				Tube Side	Mach. Mtl. (Kammprofile\Flex. Face)					
- Floating Head											
Code Requirements								TEMA Class	R		
Weight/Shell	5451.4 lb		Filled with Water	8167.1 lb				Bundle	3652.7 lb		

Remarks:

1.Tube thickness is minimum hence, 10% margin on tube thickness considered to check the thermal performance. Actual tube thickness is

Note: Reported duty and flow rates include a user-specified multiplier of 1.10.

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