

Heater Treater Design Data Form

1.1 Quote Information

Customer Information					
Name			Company		
Business Title					
Email			Phone Number:		
Equipment Information					
Quantity:		Ship to Location (City, State, Zip)			
Proposal Due Date			Freight Terms	<input type="checkbox"/> EXW <input type="checkbox"/> FCA <input type="checkbox"/> FOB <input type="checkbox"/> CIF <input type="checkbox"/> Other _____	
Potential Order Date:			Preferred Ship Date:		
Rank (1-4) Importance of the Following:					
Price:		Spec Compliance:		Delivery:	
				Quality/Reliability:	
Additional Comments					

1.2 Process Conditions

Process Data	Parameter	Heater Treater Typical Values
Inlet Pressure (PSIG)		0-100
Inlet Temp (°F)		80-100
Design Pressure (PSIG)		75-125
Gas Inlet Flowrate (MMSCFD)		1-3
Water Inlet Flowrate (BBL/Day)		0-6000
Water Inlet SG		1.1
Oil Inlet Flowrate (BBL/Day)		0-6000
Oil Inlet SG / API		0.8
Outlet BS&W Specification		0.5%
Site Elevation (Ft)		
Inlet Fluid Composition		
Shop Capable Size	<96"OD, <30'S/S, <250#	Required

1.3 Design Scope

Heater Treater Design Data Sheet

Orientation	<input type="checkbox"/> Horizontal <input type="checkbox"/> Vertical	
Rating	MAWP: <input type="checkbox"/> 75 psig <input type="checkbox"/> 100 psig <input type="checkbox"/> 125 psig <input type="checkbox"/> Other:	
Style	<input type="checkbox"/> Bare Vessel <input type="checkbox"/> Vessel with Accessories <input type="checkbox"/> Vessel with Skid <input type="checkbox"/> Packaged	
Internals	<input type="checkbox"/> Bucket & Weir <input type="checkbox"/> Split Head w/ Weir Nipple <input type="checkbox"/> Inlet Deflector <input type="checkbox"/> Inlet Shroud <input type="checkbox"/> Heat Retaining Baffle <input type="checkbox"/> Mesh Pad	
Externals	<input type="checkbox"/> Ladder <input type="checkbox"/> Cold Weather: Enclosure on Control End Horizontal <input type="checkbox"/> Cold Weather: Enclosed Outlet Piping Vertical	
Paint	<input type="checkbox"/> Cimarron Standard SP-3/DTM 1 Coat, Color: Desert Tan <input type="checkbox"/> Cimarron Standard SP-6/2 Coat, Color: Desert Tan <input type="checkbox"/> Custom	
Major Equipment (if Packaged)	Accessories (Ship Loose if Bare Vessel option taken)	
Fuel Train (If Packaged): <input type="checkbox"/> Scrubber Auto-Drain <input type="checkbox"/> Instrument Air Connections BMS Installed: <input type="checkbox"/> ARC Premier <input type="checkbox"/> Profire HBB 2100 Vessel: <input type="checkbox"/> Internal Coating Corrosion Allowance: <input type="checkbox"/> 1/32" <input type="checkbox"/> 1/16" <input type="checkbox"/> 1/8" <input type="checkbox"/> 1/4" NACE Adders: <input type="checkbox"/> Hardness Testing <input type="checkbox"/> Materials <input type="checkbox"/> Manway	Item:	OEM/Type Preference:
	Meters:	
	Water	
	<input type="checkbox"/> Coriolis	
	<input type="checkbox"/> Turbine	
	Oil	
	<input type="checkbox"/> Coriolis	
	<input type="checkbox"/> Turbine	
	<input type="checkbox"/> PSV	
	<input type="checkbox"/> Dump Valves	
<input type="checkbox"/> Level Controller		
<input type="checkbox"/> Level Switch		
Gauges (Level, PI, TI)		
<input type="checkbox"/> Sight		
<input type="checkbox"/> Transmitters		
Stack Accessories:		
<input type="checkbox"/> Bird Cone		
<input type="checkbox"/> Equalized Stack Head		
Anodes:		

Piping (if Packaged):

Corrosion Allowance:

☐ 1/32" ☐ 1/16" ☐ 1/8" ☐ 1/4"

Standard: ≤2" Threaded/> Flanged

☐ All Flanged

☐ All Socket Welded

☐ All threaded

☐ Victaulic

☐ Flanged

Skid (if Skidded or Packaged Option accepted)
☐ On-skid deck grating

Containment:

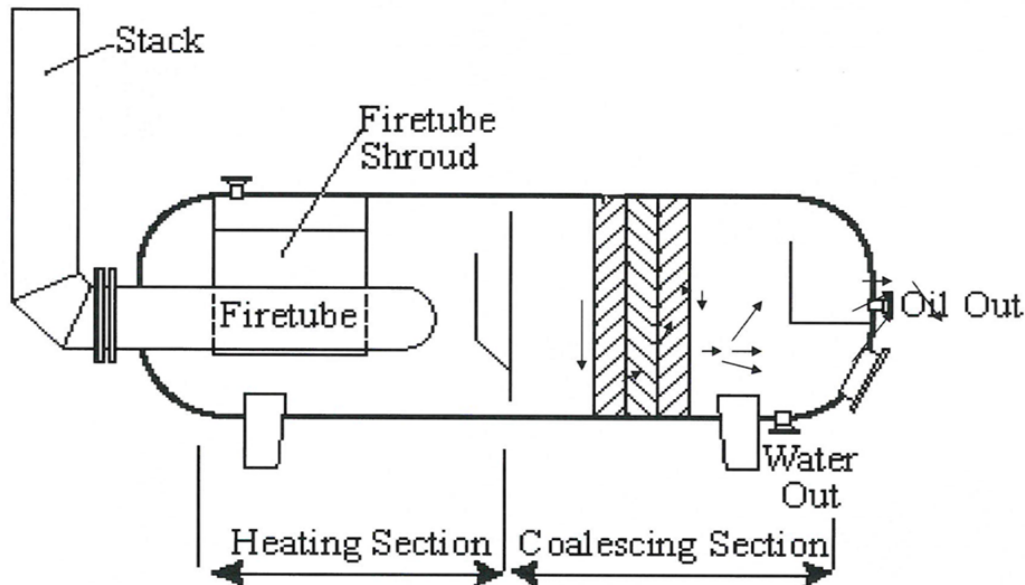
☐ Containment Pan (Cookie Sheet) with Drain

☐ In-skid containment (sloped drip pans)

Additional Requests

1.4 Application Guidance

Horizontal Treater



Typical Horizontal Treater Applications:

- Relatively high crude flowrate capacity applications with small to medium amounts of water
- Recommended for 10 API and higher gravity oils
- Treated oil will typically contain 0.5-0.1 percent BS&W for 20-50 API gravity oil respectively

Advantages over Vertical Treaters:

- Fuel conservation through improved heat transfer
- Greater separation from large interface surface areas
- Greater throughput
- Fewer external components allowing skid mounted pre-assembled shipment

Horizontal Treater Sizing Chart:

Horizontal Treater Sizing information			
Oil API Gravity	BS&W to be Heated (%)	Min. Treating Temp (F)	BTUs of Heat "C"
< 10	*	*	*
10	35	290	215
15	28	250	200
20	22	210	190
25	17	177	180
30	14	150	175

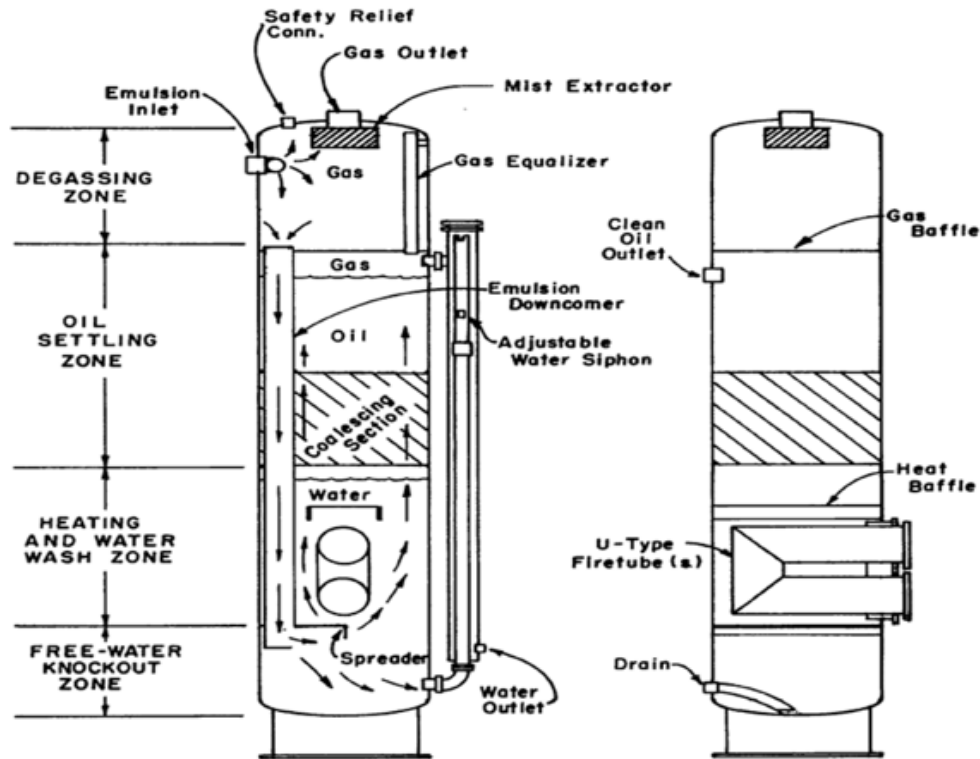
35	12	130	171
38	10	115	168
40	10	110	168
45	10	100	168
50	10	85	168

Horizontal Treater Sizing Chart							
OD x S/S	MA WP [psig]	F/T OD [in]	Max Duty [BTU/HR]	Oil Flowrate Min [BBL/Day]	Oil Flowrate Max [BBL/Day]	Water Flowrate Max [BBL/Day]	Gas [MMSCFD]
10' x 40'	75	24	2250000	3200	7000	4600	2-3
10' x 30'	75	24	1750000	2200	5500	4200	2-3
8' x 35'	125	24	2000000	2200	4800	4000	1.5-2
8' x 30'	125	24	1750000	2000	4200	3600	1.5-2
8' x 25'	125	24	1500000	1800	3600	3000	1.5-2
8' x 20'	125	24	1500000	1500	3200	2300	1.5-2
6' x 20'	250	16	1000000	700	2200	1500	0.5-1
6' x 20'	125	16	1000000	700	2200	1500	0.5-1
4' x 20'	275	10	750000	100	260	600	0.5-1

Notes:

- Consult Applications Engineering for sizing information.
- Oil Capacity: Low & High throughput of coalescing section. Range of 28 to 42 API gravities
- Free Water Capacity: Based on 10 min ret. time of water in free water section. Range from difficult to separate to easily separated.
- Firetube Rating: Should be considered maximum ratings.

Vertical Treater



Typical Vertical Treater Applications:

- Small capacity applications with flow streams containing high % of water.
- Standard designs recommended for medium to high API gravity oils.
- Treated oil will typically contain 0.5-0.2% BS&W for 20-50 API Gravity oils respectively.

Advantages over Horizontal Treaters:

- Smaller footprint conserves space.

Vertical Treater Sizing Chart:

Vertical Treater Sizing Information			
Oil API Gravity	BS&W to be Heated (%)	Min. Treating Temp (F)	BTUs of Heat "C"
< 18	*	*	*
18	24	230	194
20	22	220	190
25	17	185	180
30	14	160	175
35	12	135	171
38	10	125	168
40	10	120	168

45	10	100	168
50	10	85	168

Vertical Treater Sizing Chart								
OD x S/S	MAWP [psig]	F/T OD [in]	Max Duty [BTU/HR]	Oil Flowrate Min [BBL/Day]	Oil Flowrate Max [BBL/Day]	Water Flowrate Min [BBL/Day]	Water Flowrate Max [BBL/Day]	GOR
8' x 20'	125	24	1000000	340	900	800	2200	1000:1
8' x 20'	100	24	1000000	340	900	800	2200	1000:1
8' x 20'	75	24	1000000	340	900	800	2200	1000:1
6' x 20'	100	18	500000	190	500	400	1300	1000:1
6' x 20'	75	18	500000	190	500	400	1300	1000:1
4' x 20'	75	18	350000	100	260	200	600	1000:1