

AMERCOOL Manufacturing Inc.

P.O. Box 9310 • Tulsa, OK 74157

Phone: (918) 445-5366 • FAX (918) 445-2857

AIR COOLED EXCHANGER SPECIFICATION SHEET

Date Thu* 3:11 pm*11-APR-19

Proposal/Job No. 2000C-219-01

Reference 0300000936

Item No. EJW

1	Customer	CHARLES EQUIPMENT CO.			
2	Plant Location	SUPERIOR GLACIER RIDGE			
3	Service	5904-GLD JW			
4	Model	1 F22-083-2	Type	FORCED	No. of Bays 1 (2 Units)
5	Surface per Unit-Finned Tube	9,030			Ft ² Bare Tubes 426.5 Ft ²
6	Heat Exchanged	2,980,000			BTU/Hr MTD (Eff.) 62.57 (Crossflow) °F
7	Transfer Rate-Finned Tube	5.27	Bare Tube, Service	111.65	BTU/Hr. Ft ² °F

PERFORMANCE DATA-TUBE SIDE

9	Fluid Name	50% EG	Lethal Service	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	IN	OUT
10	Total Fluid Entering	Lb/Hr 227,500	Density	Lb/Ft ³	63.1	63.1
11		IN	OUT	Specific Heat (Liq/Vap)	BTU/Lb°F .882 /	.882 /
12	Temperature	°F 220.0	205.1	Cond. (Liq/Vap)	BTU/HrFt ² °F .235 /	
13	Liquid	Lb/Hr 227,500	227,500	Pour/Freeze Point	°F	
14	Vapor	Lb/Hr (MW)		Bubble Point	°F	
15	Nocond	Lb/Hr (MW)		Latent Heat	BTU/Lb	
16	Steam	Lb/Hr		Pressure	Psia 20.00	
17	Water	Lb/Hr		Pressure Drop Allow/Calc	Psi 10.00 / 4.75	
18	Viscosity (Liq/Vap)	Cp .6400 /	.7000 /	Fouling resist, Inside	ft ² hr °F/BTU 0.00100	

PERFORMANCE DATA-AIR SIDE

20	Air Quantity	SCFM 51,170	Lb/Hr 230,300	Altitude	Ft 1,000
21	Air Quantity/Fan	ACFM 64,890		Temperature In	°F 110.0
22				Temperature Out	°F 163.7
23					

DESIGN - MATERIAL - CONSTRUCTION

25	Design Pressure	100	Psig	Test Pressure	150	Psig	Design Temperature	300 / MDMT -20 °F		
26	TUBE BUNDLE	HEADER, Type PLUG BOX			TUBE Material SA-214 WLD					
27	Size	3.7 x 22.0			Material SA-516 GR-70					
28	No. 1	No. Tube Rows	4	No. Passes	2	Slope	0.0000	In/Ft	OD 1.000 In	Min. Thick 0.0600 In
29	Bays	1	In Parallel	In Series	Plug	A1051818			No./Bundle 74	Length 22.0 Ft
30	Bundles	1	In Parallel	In Series	Gasket	CS1813			Pitch 2.3125	InΔ
31	Pass Arrangement (Top to Bottom)				Corrosion Allowance	0.0625	In	FIN Type L-TENSION		
32	Rows / Pass	4 / 2			Size In Nozzle (1)	6.00	SCH XS SA-106B	In	Material ALUM	
33	Turbulators	NO			Size Out Nozzle (1)	6.00	SCH XS SA-106B	In	OD 2.250 In	Stock Thick 0.015 In
34	Steam Coil	NO			Rating & Facing	150 -RF SA-105			No./In 10	Support Chan. / Staple
35	Hailscreens	YES			Vent (1)	1-3000	Drain (1)	1-3000	Code-ASME VIII, Div 1	YES Stamp NONE
36	Louvers	NONE (0)			TI	PI			Radiograph N	Heat Treat N
37	Frame Finish	HTC 1 Coat Galvanize			Header Finish	WMSB 1 Coat Metalize			Tube Hole Grooving	YES

MECHANICAL EQUIPMENT

39	FAN Mfg & Model	Moore or Equal 27 5000			DRIVER Type	ELECTRIC MOTOR			SPEED REDUCER Type V-BELT		
40	No./Bay	2	RPM	434	S.F.	1.00	Insul/TR	CLASS F / B	BELTS (3) 3VBD- 850. SHEAVES 19.0/4.8		
41	Dia.	7.0	Ft.	No. Blades	5	No./Bay	2	Frame	215T	HP 10.0	
42	Pitch	ADJUSTABLE	Angle°	9.	RPM (2)	1750	870	Duty	CHEM	HP Rating 17.4	Ratio 4.03
43	Matl, Blade	ALUMINUM	Hub	CASTALUM	Enclosure	TEFC V & D None			Support: SUSPENDED FROM STRUCTURE		
44	HP/Fan, Des.	7.6	DBA	75.	V/P/C	460/3/60			Space Heater	NO	
									Vibration Switch	NONE	

STRUCTURE

WALKWAYS

45	Mounting	GRADE			Inlet Header	in. None				
46	Windload - PSF	30.0		Seismic	None			Outlet/Return	in. None	
47	Finish	HTC 1 Coat Galvanize			Drive Access	in. None				

NOTES

48	Items combined:	EJW	AUX			
49	Coil Volume (ft ³):	9.				
50	Assembled Drive, Structure & Bundles (Within Shipping Restrictions)					
51						
52						
53						
54						
55	Plot Area	8.3 x 22.0 ft	Weight Bundle 3,208 Lbs	Total Shipping	14,210	Lbs

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AIR COOLED EXCHANGER SPECIFICATION SHEET

Date Thu* 3:11 pm*11-APR-19

Proposal/Job No. 2000C-219-02

Reference 0300000936

1	Customer	CHARLES EQUIPMENT CO.			Item No.	AUX
2	Plant Location	SUPERIOR GLACIER RIDGE				
3	Service	5904-GLD IC				
4	Model	Type	FORCED		No. of Bays	1 (2 Units)
5	Surface per Unit-Finned Tube	11,470	Ft ²	Bare Tubes	541.8	Ft ²
6	Heat Exchanged	1,172,000	BTU/Hr	MTD (Eff.)	23.70 (Crossflow)	°F
7	Transfer Rate-Finned Tube	4.31	Bare Tube, Service	91.23	BTU/Hr. Ft ² °F	

PERFORMANCE DATA-TUBE SIDE

9	Fluid Name	50% EG	Lethal Service	Yes	No	<input checked="" type="checkbox"/>	IN	OUT
10	Total Fluid Entering	Lb/Hr 41,600	Density	Lb/Ft ³			64.9	64.9
11		IN	OUT	Specific Heat (Liq/Vap)	BTU/Lb°F		.845 /	.845 /
12	Temperature	°F 163.4	130.0	Cond. (Liq/Vap)	BTU/HrFt°F		.242 /	
13	Liquid	Lb/Hr 41,600	41,600	Pour/Freeze Point	°F			
14	Vapor	Lb/Hr (MW)		Bubble Point	°F			
15	Nocond	Lb/Hr (MW)		Latent Heat	BTU/Lb			
16	Steam	Lb/Hr		Pressure	Psia		20.00	
17	Water	Lb/Hr		Pressure Drop Allow/Calc	Psi		5.00 / 1.22	
18	Viscosity (Liq/Vap)	Cp 1.080 /	1.640 /	Fouling resist, Inside	ft ² hr °F/BTU		0.00100	

PERFORMANCE DATA-AIR SIDE

20	Air Quantity	SCFM 65,770	Lb/Hr 296,000	Altitude	Ft 1,000
21	Air Quantity/Fan	ACFM .0		Temperature In	°F 110.0
22				Temperature Out	°F 126.4
23					

DESIGN - MATERIAL - CONSTRUCTION

25	Design Pressure	100	Psig	Test Pressure	150	Psig	Design Temperature	300 / MDMT -20	°F
26	TUBE BUNDLE			HEADER, Type PLUG BOX			TUBE Material SA-214 WLD		
27	Size	4.7 x 22.0		Material	SA-516 GR-70				
28	No. 1	No. Tube Rows	4	No. Passes	4	Slope	0.0000	In/Ft	OD 1.000 In Min. Thick 0.0600 In
29	Bays	1	In Parallel	In Series	Plug	A1051818		No./Bundle 94	Length 22.0 Ft
30	Bundles	1	In Parallel	In Series	Gasket	CS1813		Pitch 2.3125	InΔ
31	Pass Arrangement (Top to Bottom)				Corrosion Allowance	0.0000	In	FIN Type	L-TENSION
32	Rows / Pass	4 / 4		Size In Nozzle (1)	3.00	SCH 40	SA-106B	In	Material ALUM
33	Turbulators	NO		Size Out Nozzle (1)	3.00	SCH 40	SA-106B	In	OD 2.250 In Stock Thick 0.015 In
34	Steam Coil	NO		Rating & Facing	150 -RF	SA-105		No./In 10	Support Chan. / Staple
35	Hailscreens	YES		Vent (1)	1-3000	Drain (1)	1-3000	Code-ASME VIII, Div 1	YES Stamp NONE
36	Louvers	NONE (0)		TI	PI			Radiograph N	Heat Treat N
37	Frame Finish	HTC 1 Coat Galvanize		Header Finish	WMSB 1 Coat Metalize			Tube Hole Grooving	YES

MECHANICAL EQUIPMENT

39	FAN Mfg & Model		DRIVER Type			SPEED REDUCER Type		
40	No./Bay	RPM	S.F.	Insul/TR				
41	Dia.	Ft. No. Blades	No./Bay	Frame	HP	No./Bay		
42	Pitch	Angle°	RPM	Duty		HP Rating	Ratio	
43	Matl, Blade	Hub	Enclosure	V & D		Support:		
44	HP/Fan, Des.	DBA	V/P/C	Space Heater		Vibration Switch		

STRUCTURE

WALKWAYS

45	Mounting	Inlet Header	in.
46	Windload - PSF	Seismic	Outlet/Return in.
47	Finish	Drive Access	in.

NOTES

48	Coil Volume (ft ³):	10.
49		
50		
51		
52		
53		
54		
55	Plot Area	ft Weight Bundle 3,792
		Lbs Total Shipping 14,210
		Lbs