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Thermosiphon oil cooler

Customer / Project Tampa Cargo Selection ID NUG5C5M2Y
Contact Miguel Davila Print date 1/28/2012
User name Roberto

Comment

Oil cooler

Model: FG5X12-90 (1-1/4" MPT)			
Cooling rate (Btu/h).....	182224	Model size.....	5x12
Log mean temp. diff. (°F).....	70.9	Nominal surface (ft²).....	33.7
Overall HTC (Btu/h-ft²-°F).....	101	Dimensions.....	5.1W x 13.3H x 8.3D
Oversurface percent.....	32.8	Net weight (lb).....	30.6
Design Conditions	Side A - Evaporating	Side B - Liquid	
Refrigerant	R-22		
Ref. mass flow (lb/min)	82.0		
Target evaporator temp. (°F)	95.0		
Leaving pressure (psig)	181.8		
Circulation rate	2		
Surge drum height adder (ft)	1.7		
Fluid type		Bitzer compressor oil	
Fluid mass flow rate (lb/min)		251.1	
Entering fluid temp. (°F)		180.0	
Leaving fluid temp. (°F)		153.8	
Fluid flow rate (GPM)		31.7	
Fluid fouling factor (h-ft²-°F/Btu)		0.00010	
Model Parameters			
Number of channels	44	45	
Velocity (ft/s)	1.83	0.67	
Pressure drop (psi)	0.8	4.8	
Heat transfer coef. (Btu/h-ft²-°F)	283	160	
Internal volume (ft³)	0.132	0.135	



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Ratings at Varying Conditions

Percent difference	-15%	-7½%	0%	7½%	15%
Pressure drop (psi) (Side A)	0.6	0.7	0.8	1.0	1.1
Pressure drop (psi) (Side B)	3.9	4.4	4.8	5.2	5.6
Cooling rate (Btu/h)	154891	168557	182224	195891	209558
Fluid flow rate (GPM) (Side B)	26.9	29.3	31.7	34.1	36.4
Fluid mass flow rate (lb/min) (Side B)	213.5	232.3	251.1	270.0	288.8
Entering fluid temp. (°F) (Side B)	180.0	180.0	180.0	180.0	180.0
Leaving fluid temp. (°F) (Side B)	153.8	153.8	153.8	153.8	153.8
Oversurface percent	44.6	38.4	32.8	27.9	23.4

Disclaimer

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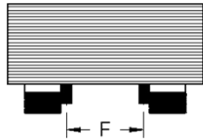
Dimension Sheet Brazed Plate Heat Exchanger



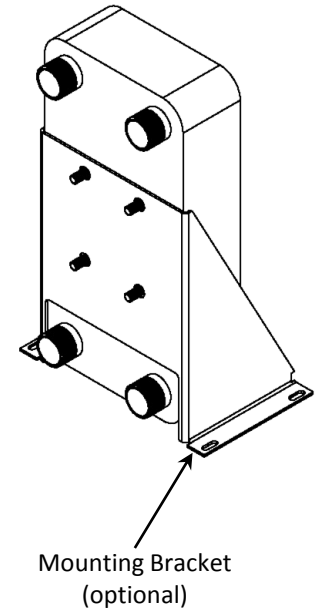
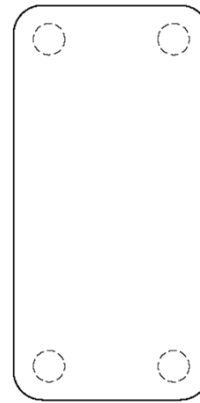
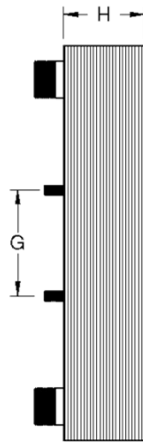
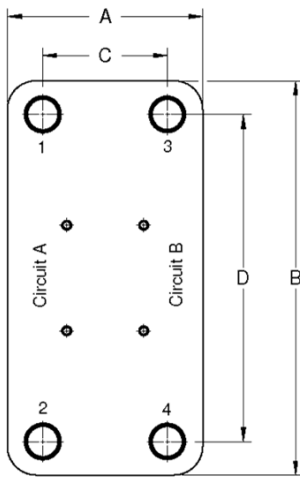
GEA Heat Exchangers

Contact: Miguel Davila	Selection ID: NUG5C5M2Y
Customer / Project: Tampa Cargo	
Model Nomenclature: FG5X12-90 (1-1/4" MPT)	

Dimensions - inches (mm): Reference only



A:	5.08 (129.0)
B:	13.29 (337.6)
C:	2.87 (72.9)
D:	11.06 (280.9)
F:	2.48 (63.0)
G:	3.54 (89.9)
H:	8.32 (211.3)



Connections

Circuit A

Circuit B

Position 1	Position 2	Position 3	Position 4
1-1/4" MPT	1-1/4" MPT	1-1/4" MPT	1-1/4" MPT

Volume per BPHE

Circuit A

Circuit B

0.132 ft ³ (3.742 L)	0.135 ft ³ (3.827 L)
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Net Weight: 30.6 lb (13.9 kg)

Installation Notes:

- Pipe in counter flow direction.
- Water strainer should be installed in the fluid inlet circuit to protect the heat exchanger from blockage (20-40 mesh).
- Thread Connections – Use Teflon tape or other sealant on male threaded part of the connection to prevent leakage.

Technical Data

Standard construction materials:

Braze Alloy:	Copper 99.9%
Connector:	304 Stainless Steel
Plate:	316L Stainless Steel

Allowable Working Pressure and Temperature:

Max pressure	Circuit A: 450 psig (31.0 bar ga) Circuit B: 450 psig (31.0 bar ga)
Max temperature	350.0 °F (176.7 °C)
Min temperature	-320.0 °F (-195.6 °C)

Code Approvals: UL Listed, CRN pending

Optional: ASME (UM stamped), PED (CE)

Note: Code approval applies to heat exchangers only.

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