TRANTER®
The heat transfer people

Performance Specification

Customer: Coil
Email:
Cust. Reference: 56 kw Clip
Model: GCD-009-H-4-P-139-0

Date: 2010-03-04
Proposal No.:
Run No.: 0
Item No.:
Technician:
Units Required: 1

Intended End Use: Heat exchanger to cool Water 14 °C using 12 °C Water with pressure drop at or below 20 kPa on hot side and at or below 20 kPa on cold side.

		Hot Side		Cold Side		
Fluid Name		Water		Water		
OPERATING DATA		***Inlet***	***Outlet***	***Inlet***	***Outlet***	
Total Liquid flow	kg/h	3.446,18	3.446,18	3.445,55	3.445,55	kg/h
Operating Temperature	°C	28,00	14,00	12,00	26,00	°C
Pressure drop (allowed / calc.)	kPa	20,00 / 3,35		20,00 / 3,37		kPa
Total Heat Exchanged	kW		56			
U-Clean	W/(m²·°C)		2.446			
U-Service	W/(m²·°C)		2.222			
Total Heat Transfer Area	m²		12,60			
LMTD	°C		2,00			
Fouling Factor	(m²·°C)/kW		0,0407			
Surface Margin	%		10			
FLUID PROPERTIES		***Inlet***	***Outlet***	***Inlet***	***Outlet***	
Specific Gravity	-	1,00	1,00	1,00	1,00	
Specific Heat Capacity	kJ/(kg·°C)	4,18	4,18	4,19	4,18	
Thermal Conductivity	W/(m·°C)	0,61	0,59	0,58	0,61	
Viscosity (avg.)	cP	0,83	1,17	1,23	0,87	
CONNECTIONS						
Position		M3	S3	S2	M2	
Type		THREADED	THREADED	THREADED	THREADED	
Size		R 1 1/2"	R 1 1/2"	R 1 1/2"	R 1 1/2"	
Material		1.4401		1.4401		
CONSTRUCTION						
Pass Arrangement		2(1 + 1)		2(1 + 1)		
Channel Arrangement		34H+35H		34H+35H		
A-Dimension / C-Dimension	mm	403,1 / 855				
Plates (Material / Thickness)		1.4401 / 0,4 mm				
Gasket Material (Hot/Cold)		NBR (P)(Clip-On)		NBR (P)(Clip-On)		
No. of Plates		139				
Frame material / Paint / Color		P265GH Carbon Steel / S1 - 2 comp. Oxirane Ester / RAL 5012 (Royal Blue)				
Tightening Bolts / Nuts / Finish		8.8 / 8 / Zinc				
Pressure (design / test)	bar(g)	10,00 / 14,30		10,00 / 14,30		
Temperature (min / design)	°C	-10,00 / 80,00		-10,00 / 80,00		
Volume (per Side)	m³	0,02		0,02		
Weight empty / flooded (per unit)	kg	153 / 183				
Pressure vessel code		PED				

Remarks:

The performance guarantee is based on the accuracy of the data presented above, and the customers ability to supply product and operating conditions in conformance with the above.

Tranter, Inc 1900 Old Burk Highway Wichita Falls, TX 76306-5904
Phn: 940-723-7125 Fax: 940-723-1131

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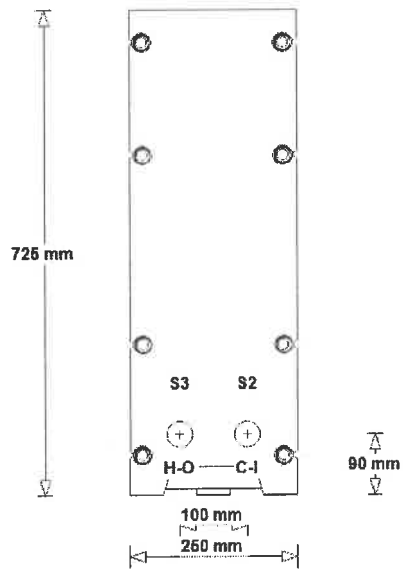
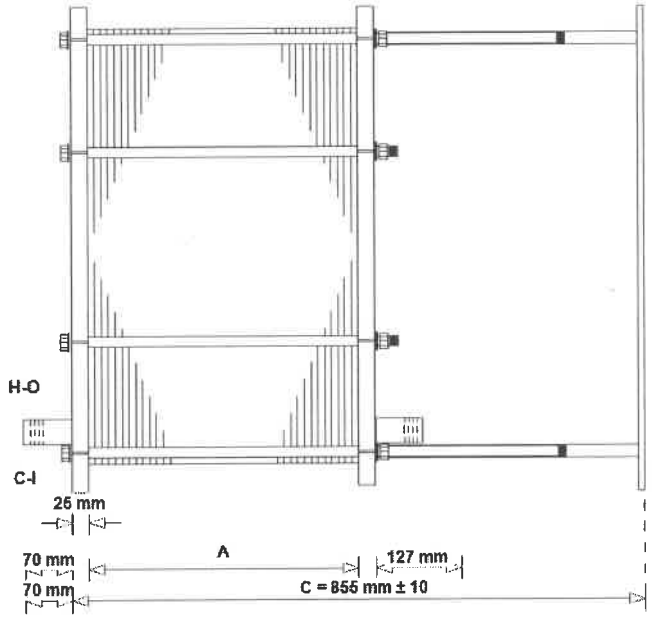
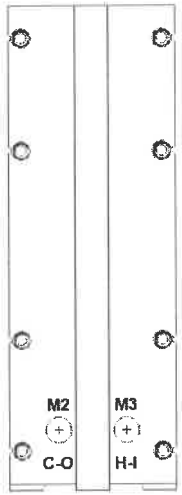
PLATE & FRAME LAYOUT
GCD-009-H-4-P-139-0

Sizing Number
000000





A: 403 mm
A(Minimum): 391 mm
A(Maximum): 415 mm



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Technical Specification

Customer:

Email:
Cust. Reference:

Date: 2010-03-04
Proposal No.:
Run No.: 0
Item No.:
Technician:
Units Required: 1

Model: GCD-009-H-4-P-139-0

Description	:Price Rank: 1		
# Passes	1/1	1/1	
Plate Mix	34H+35H	34H+35H	
Volumetric Flow Rates			
Per Channel	0,1000	0,1000	m³/h
Per Unit	3,4500	3,4500	m³/h
Total	3,4500	3,4500	m³/h
Mass Flow Rates			
Per Channel	99,8900	99,8700	kg/h
Per Unit	3.446,1800	3.445,5500	kg/h
Total	3.446,1800	3.445,5500	kg/h
Temperatures			
Inlet (Supplied)	28,0000	12,0000	°C
Outlet (Supplied)	14,0000	26,0000	°C
Inlet (Actual)	28,0000	12,0000	°C
Outlet (Actual)	14,0000	26,0000	°C
Pressure Drops			
Port	0,2800	0,2800	kPa
Channel	3,0700	3,0900	kPa
Actual	3,3463	3,3678	kPa
Max PD Allowed	20,0000	20,0000	kPa
Port Diameter (Inlet)	40,0000	40,0000	mm
Port Diameter (Outlet)	40,0000	40,0000	mm
Operating Pressure	0,0000	0,0000	bar
Shear Stress	3,4569	3,4814	Pa
Velocities			
Nozzle (Inlet)	0,6700	0,6700	m/s
Nozzle (Outlet)	0,6700	0,6700	m/s
Port (Inlet)	0,7600	0,7600	m/s
Port (Outlet)	0,7600	0,7600	m/s
Channel	0,0700	0,0700	m/s
Reference Temp.	21,0000	19,0000	°C
Wall Temp (↓ warm / ↑ cold)	13,0686	26,9395	°C
Wall Viscosity	0,9967	0,9993	cP
Film Coefficient	5.251,8553	5.206,2326	W/(m²·°C)
Reynolds Number	367,6779	349,8409	
F A 1	0,9967	1,0034	
NTU	7	7	

Frame Type	P		
Unit Dimension			
A(Minimum)	391,01	mm	
A	403,10	mm	
A(Maximum)	415,19	mm	
B	830,00	mm	
C	855,00	mm	
T	25,00	mm	
Plate (Quantity/Maximum)	139/142		
Unit Heat Transfer Area	12,6	m²	
U Values			
Clean	2.445,7500	W/(m²·°C)	
Required	2.221,5200	W/(m²·°C)	
LMTD	2,0000	°C	
Fouling Factor			
Allowed	0,000000	(m²·°C)/kW	
Actual	0,040724	(m²·°C)/kW	
Oversurfacing			
Allowed	10	%	
Actual	10,0938	%	
FT	1		

Version: 1.0.3.51 (0; 0; 0)

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