



Performance Specification

Customer: Coil

Date: 2010-03-03

Email:

Proposal No.:

Cust. Reference: 950 KW velocita

Run No.: 0

Item No.:

Model: GLD-013-L-5-PI-64-0

Technician:
Units Required: 1

Intended End Use: Heat exchanger to cool Water 30 °C using 20 °C Water with pressure drop at or below 20 kPa on hot side and at or below 20 kPa on cold side.

		<i>Hot Side</i>		<i>Cold Side</i>			
Fluid Name		Water		Water			
OPERATING DATA		Inlet	Outlet	Inlet	Outlet		
Total Liquid flow	kg/h	27.221,04	27.221,04	40.924,92	40.924,92	kg/h	
Operating Temperature	°C	80,00	50,00	20,00	40,00	°C	
Pressure drop (allowed / calc.)	kPa	20,00 / 8,96		20,00 / 19,31		kPa	
Operating Pressure	bar	10,00	9,91	10,00	9,81	bar	
Total Heat Exchanged	kW			950			
U-Clean	W/(m ² ·°C)			4.624			
U-Service	W/(m ² ·°C)			3.673			
Total Heat Transfer Area	m ²			7,44			
LMTD	°C			34,76			
Fouling Factor	(m ² ·°C)/kW			0,0552			
Surface Margin	%			26			
FLUID PROPERTIES		Inlet	Outlet	Inlet	Outlet		
Specific Gravity	-	0,97	0,99	1,00	1,00		
Specific Heat Capacity	kJ/(kg·°C)	4,19	4,18	4,18	4,18		
Thermal Conductivity	W/(m·°C)	0,67	0,64	0,60	0,63		
Viscosity (avg.)	cP	0,35	0,55	1,00	0,65		
CONNECTIONS							
Position		S1	S3	S2	S4		
Type		THREADED	THREADED	THREADED	THREADED		
Size		R 2 1/2"	R 2 1/2"	R 2 1/2"	R 2 1/2"		
Material		1.4401		1.4401			
CONSTRUCTION							
Pass Arrangement		1		1			
Channel Arrangement		31L+0L		32L+0L			
A-Dimension / C-Dimension	mm	217,6 / 580					
Plates (Material / Thickness)		1.4301 / 0,5 mm					
Gasket Material (Hot/Cold)		NBR (P)		NBR (P)			
No. of Plates		64					
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)	16,00 / 22,88		16,00 / 22,88			
Temperature (min / design)	°C	-10,00 / 98,00		-10,00 / 98,00			
Volume (per Side)	m ³	0,01		0,01			
Weight empty / flooded (per unit)	kg	163 / 183					
Pressure vessel code		PED					

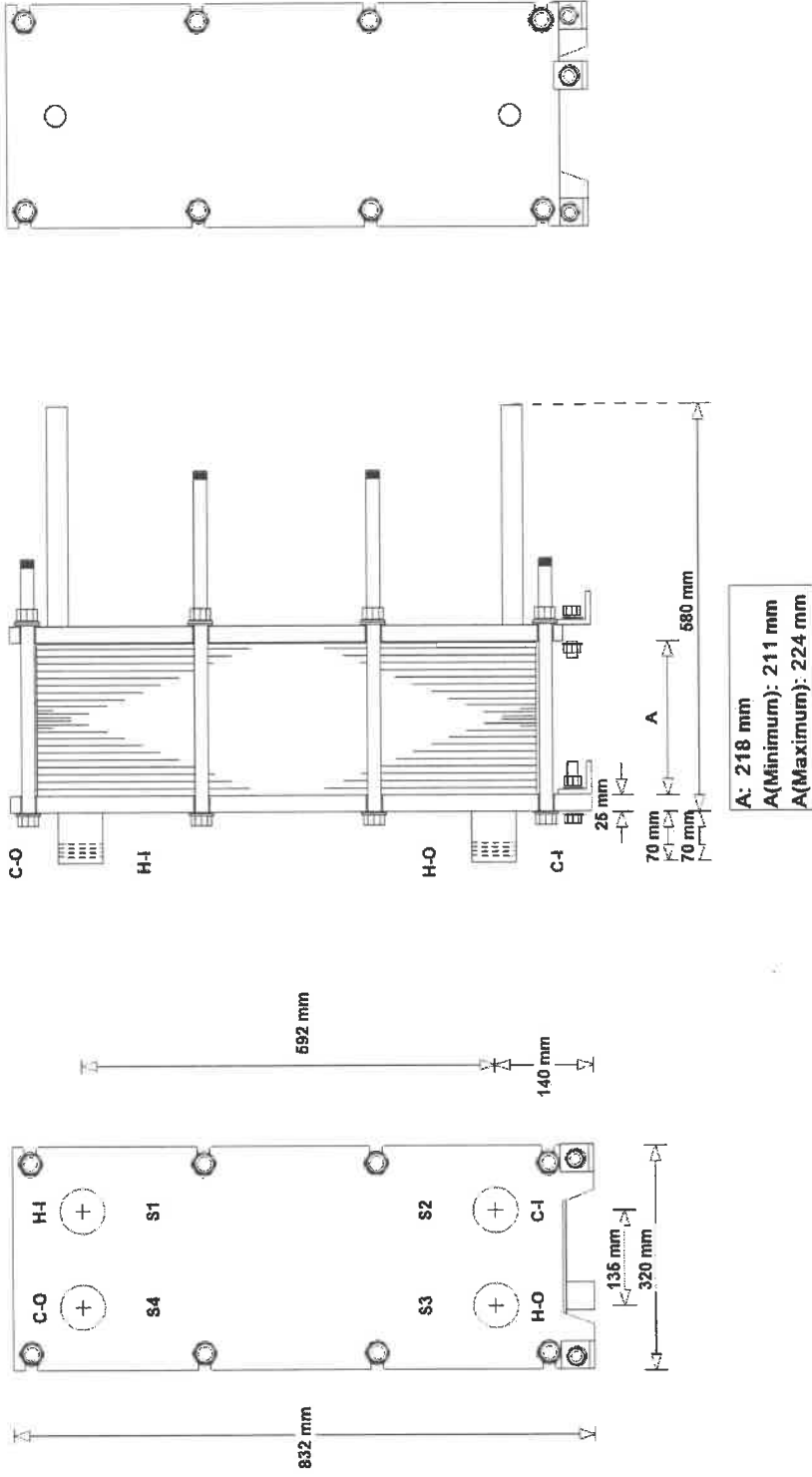
Remarks:

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

PLATE & FRAME LAYOUT GLD-013-L-5-PI-64-0

Sizing Number
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Technical Specification

Customer:

Date: 2010-03-03

Email:

Proposal No.:

Cust. Reference:

Run No.: 0

Item No.:

Technician:

Units Required: 1

Model: GLD-013-L-5-PI-64-0

Description	: Price Rank:	1
# Passes	: 1/0	1/0
Plate Mix	: 31L+0L	32L+0L
Volumetric Flow Rates		
Per Channel	: 0,9000	1,2800 m³/h
Per Unit	: 27,7600	41,1000 m³/h
Total	: 27,7600	41,1000 m³/h
Mass Flow Rates		
Per Channel	: 878,1000	1.278,9000 kg/h
Per Unit	: 27.221,0400	40.924,9200 kg/h
Total	: 27.221,0400	40.924,9200 kg/h
Temperatures		
Inlet (Supplied)	: 80,0000	20,0000 °C
Outlet (Supplied)	: 50,0000	40,0000 °C
Inlet (Actual)	: 80,0000	20,0000 °C
Outlet (Actual)	: 50,0000	40,0000 °C
Pressure Drops		
Port	: 2,1300	4,7600 kPa
Channel	: 6,8300	14,5600 kPa
Actual	: 8,9642	19,3117 kPa
Max PD Allowed	: 20,0000	20,0000 kPa
Port Diameter (Inlet)	: 68,0000	68,0000 mm
Port Diameter (Outlet)	: 68,0000	68,0000 mm
Operating Pressure	: 10,0000	10,0000 bar
Shear Stress	: 16,2881	34,7157 Pa
Velocities		
Nozzle (Inlet)	: 2,1900	3,2500 m/s
Nozzle (Outlet)	: 2,1900	3,2500 m/s
Port (Inlet)	: 2,1200	3,1400 m/s
Port (Outlet)	: 2,1200	3,1400 m/s
Channel	: 0,4000	0,5700 m/s
Reference Temp.	: 65,0000	30,0000 °C
Wall Temp (↓ warm / ↑ cold)	: 36,4324	56,6403 °C
Wall Viscosity	: 0,5584	0,5994 cP
Film Coefficient	: 10.224,4773	11.115,2675 W/(m²·°C)
Reynolds Number	: 5216,322	4160,2078
F A 1	: 0,9746	1,0303
NTU	: 0,863	0,5754

Frame Type	:	PI
Unit Dimension		
A(Minimum)	:	211,07 mm
A	:	217,60 mm
A(Maximum)	:	224,13 mm
B	:	269,40 mm
C	:	580,00 mm
T	:	25,00 mm
Plate (Quantity/Maximum)	:	64/71
Unit Heat Transfer Area	:	7,44 m²
U Values		
Clean	:	4.624,0400 W/(m²·°C)
Required	:	3.673,3600 W/(m²·°C)
LMTD	:	34,7600 °C

Fouling Factor		
Allowed	:	0,000000 (m²·°C)/kW
Actual	:	0,055157 (m²·°C)/kW
Oversurfacing		
Allowed	:	0 %
Actual	:	25,8803 %
FT	:	1

Version: 1.0.3.51 (0; 0; 0)



Performance Specification

Customer: Co.i.l.
 Maurizio Milanese
 MONMB20100226-1
 Email:
 Cust..Reference: 500 KW

Date: 2010-02-26
 Proposal No.:

Run No.: 0
 Item No.:
 Technician:
 Units Required: 1

Model: GLD-013-L-5-P-30-0

Intended End Use: Heat exchanger to cool Water 30 °C using 20 °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	14.326,86	14.326,86	21.539,43	21.539,43 kg/h
Operating Temperature	°C	80,00	50,00	20,00	40,00 °C
Pressure drop (allowed / calc.)	kPa	20,00 / 9,67		20,00 / 19,38	
Operating Pressure	bar	10,00	9,90	10,00	9,81 kPa
Total Heat Exchanged	kW			500	
U-Clean	W/(m ² .°C)			4.954	
U-Service	W/(m ² .°C)			4.281	
Total Heat Transfer Area	m ²			3,36	
LMTD	°C			34,76	
Fouling Factor	(m ² .°C)/kW			0,0307	
Surface Margin	%			16	
FLUID PROPERTIES					
		Inlet	Outlet	Inlet	Outlet
Specific Gravity	-	0,97	0,99	1,00	1,00
Specific Heat Capacity	kJ/(kg.°C)	4,19	4,18	4,18	4,18
Thermal Conductivity	W/(m.°C)	0,67	0,64	0,60	0,63
Viscosity (avg.)	cP	0,35	0,55	1,00	0,65
CONNECTIONS					
Position		S1	S3	S2	S4
Type		THREADED	THREADED	THREADED	THREADED
Size		R 2 1/2"	R 2 1/2"	R 2 1/2"	R 2 1/2"
Material		1.4401		1.4401	
CONSTRUCTION					
Pass Arrangement		1		1	
Channel Arrangement		14L+0L		15L+0L	
A-Dimension / C-Dimension	mm	102 / 375			
Plates (Material / Thickness)		1.4301 / 0,5 mm			
Gasket Material (Hot/Cold)		NBR (P)		NBR (P)	
No. of Plates		30			
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)	16,00 / 22,88		16,00 / 22,88	
Temperature (min / design)	°C	-10,00 / 98,00		-10,00 / 98,00	
Volume (per Side)	m ³	0,00		0,00	
Weight empty / flooded (per unit)	kg	138 / 147			
Pressure vessel code		PED			

Remarks:

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 and the customers ability to supply product and operating conditions in conformance with the above.*

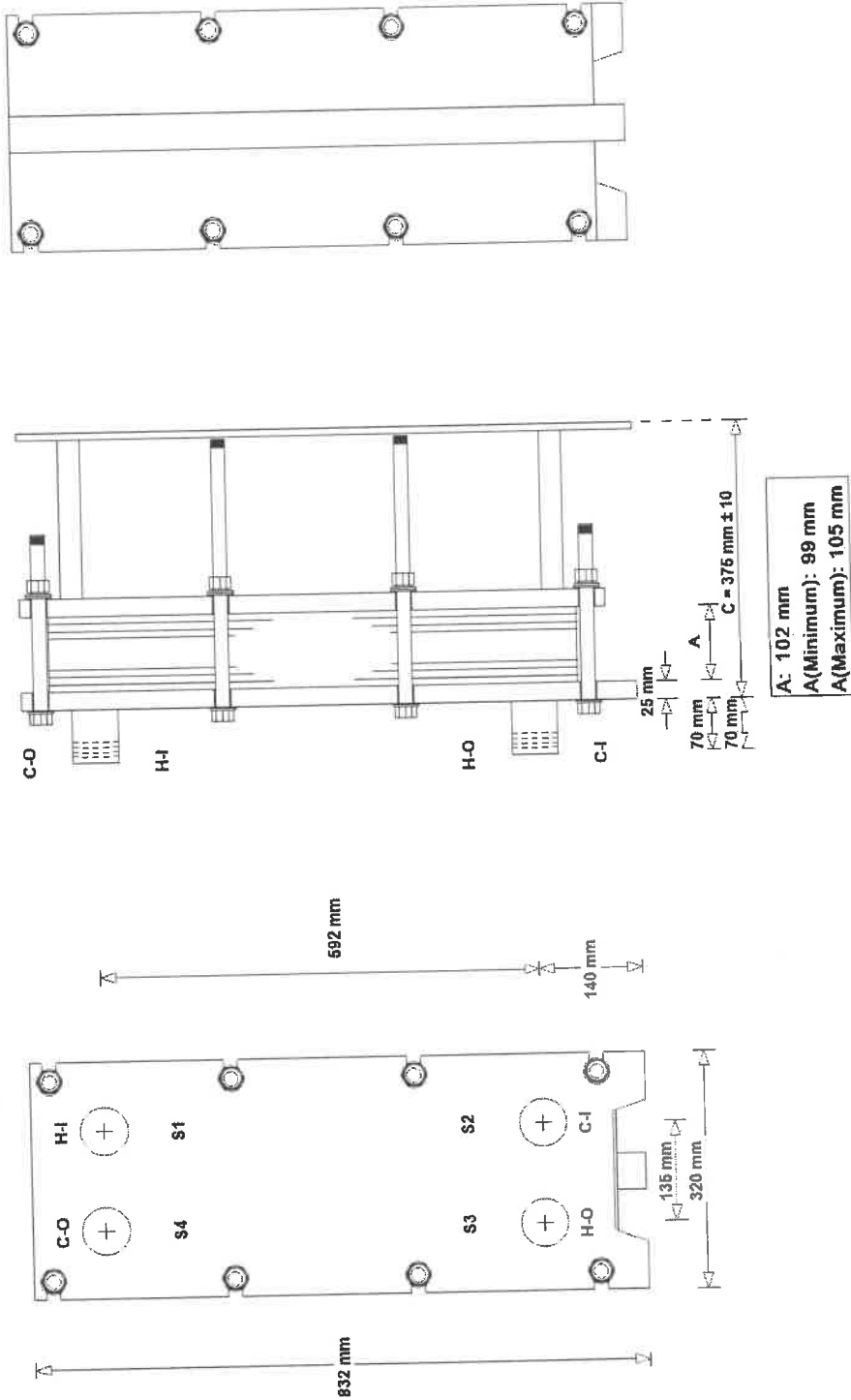
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The heat transfer people

PLATE & FRAME LAYOUT GLD-013-L-5-P-30-0

Sizing Number
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