



DEHDASHT PETROCHEMICAL INDUSTRY COMPANY
DEHDASHT HIGH DENSITY POLYETHYLENE PROJECT



DOCUMENT TITLE: Oil Cooler Data Sheet

POI: IFA

Contract No.: DPIC/98-12

DOCUMENT NUMBER: DPIC9812-000-VD-1002-ME-DS-0078

Rev. No.: D1

All thickness will be finalized after revising comments

DOCUMENT TITLE:

**Oil Cooler Data Sheet
(E-PK6101-1A/B)**

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PURCHASER'S COMMENT/APPROVAL STATUS					Purchaser: NARGAN
1	AP: Approved (Released for Manufacturing)				Requisition No.: DPIC98-12-001-000-ME-MR-4150-0001-D1
<input checked="" type="checkbox"/>	AN: Approved With Minor Comments (Fabrication may Proceed)				
3	NF: Approved With Comments (Fabrication not Proceed)				Item No. (Tag No.): PK-6101
4	RJ: Rejected				
5	NR: Not be Returned				Vendor Doc. No.: DPIC9812-000-VD-1002-ME-DS-0078-D1
Date: 11.01.2022		Signature: A.AB			
D1	01.Jan.22	A.VOSOUGH	DR.A.NEJATI	DR.A.NEJATI	
D0	30.Oct.21	A.VOSOUGH	DR.A.NEJATI	DR.A.NEJATI	
REV	DATE ISSUE	PREPARED	CHECKED	APPROVED	



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BEM IS OK FOR THIS CASE

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IN ISO STANDARD ITEM 4.2 IS MENTIONED THAT THE CONSTRUCTION SHALL CONFORM TO TEMA STANDARD. WHAT IS THE ADVANTAGE OF ISO OVER TEMA?

based on API 614 removable bundle shall be considered

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1	SERVICE	OIL COOLER		ITEM	E-PK6101-1A/B			
2	ID. X LENGTH	381	X	3000	HORIZONTAL	TYPE	BEM	
3	NO. OF UNIT			29.8	m ²	IN PARALLEL	1	
4	SHELLS PER UNIT			29.8	m ²	IN SERIES	1	
5	TEMA CLASS	R		REQUIRED OVERSPEER	TEMA. 9TH ED.			
6	please recheck class "R" or "c"							
7	When TEMA Class R is specified, the heat exchanger shall be in accordance with ISO 16812 as specified.							
8	FLUID CIRCULATED			OIL		JACKETE WATER		
9	TOTAL			12672		22548.6		
10				IN	OUT	IN	OUT	
11	VAPOUR	CORRECTED		-	-	-	-	
12	LIQUID			12672	12672	22548.6		
13	NON CONDENSABLES							
14	TEMPERATURE			80		37		
15	DENSITY at T and P (Vap./Liq.)			873.5		993.59	990.48	
16	VISCOSITY at T and P (Vap./Liq.)			1.6365	2.1900	0.6914	0.5960	
17	MOLECULAR WEIGHT, Vap	NO NEEDED						
18	SPECIFIC HEAT (Vap./Liq.)			2.0871	1.8530	4.1773	4.1774	
19	THERMAL CONDUCTIVITY (Vap./Liq.)			0.150	0.1500	0.6252	0.6352	
20								
21	INLET PRESSURE (abs)			21.900		6.914		
22	VELOCITY (Mean/Max)			/	0.18	/	0.79	
23	PRESSURE DROP (Allowable/Calculated)			0.200	0.024	1.000	0.146	
24	FOULING RESISTANCE (Min)			0.00017		0.000200		
25	TYPE OF CLEANING MAINTENANCE			<input checked="" type="checkbox"/> NONE	<input type="checkbox"/> MECH. <input type="checkbox"/> CHEM.	<input checked="" type="checkbox"/> NONE	<input type="checkbox"/> MECH. <input type="checkbox"/> CHEM.	
26	HEAT EXCHANGED	209		kW MTD (CORRECTED)		20.1 °C		
27	TRANSFER RATE: SERVICE:	356.38		CALCULATED:	420.80		513.01	
28		-45/135		TION		discrepancy with thermal data sheet, please clarify		
29	DESIGN PRESSURE			25 barg		20		
30	VACUUM PRESSURE			CORRECTED				
31	TEST PRESSURE			32.5 barg		26		
32	DESIGN TEMPERATURE			120 °C		190		
33	MIN. DESIGN METAL TEMPERATURE			-10 °C		-10		
34	NUMBER PASSES PER SHELL			1		4		
35	CORROSION ALLOWANCE			3		3		
36	PARTICULAR SERVICE			-		-		
37	PROVIDE X-RAY			DWG WILL BE CORRECTED		FULL		
38	PROVIDE STRESS RELIEVING					BUNDLE <input type="checkbox"/> SHELL		

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CORRECTED

DEHDASHT HIGH DENSITY POLY...



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based on thermal calculation number of Crosspasses "13" have been specified while in sketch of thermal calculation 11 crosspses and 12 baffle have been considered, please clarify and remove discrepancy

GIVEN IN MECH. DATA SHEET

please clarify clearly two grooves expand with seal weld

to be specified in thermal datasheet

MATERIAL IS NOT LOW TEMP. C.S.

all material shall be normalized

Based on fluid in shell side(oil is dirty)orientation of tube to be revised

PITCH IS OK

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1	CONSTRUCTION OF COOLER				
2	TUBE TYPE : <input checked="" type="checkbox"/> PLAIN <input type="checkbox"/> FINNED	406.4	mm	BAFFLE TYPE	Single segmental
3	TUBE OD: 19.05	mm	SHELL ID	381	mm
4	TUBE THK (avg): 2.11	mm	MANAGEMENT PROTECTION	NO	
5	TUBE LENGTH: 3000	mm	TUBESHEET THK	366.309	mm
6	TUBE NO: 166	#	TUBE TO TUBESHEET JOINT	46	%
7	PITCH: 24	mm	TUBE TO TUBESHEET WELD TYPE	30	%
8	<input checked="" type="checkbox"/> 30° <input type="checkbox"/> 60°		<input checked="" type="checkbox"/> WELD <input checked="" type="checkbox"/> EXPAND <input type="checkbox"/> GROOVES	200	mm
9	<input type="checkbox"/> 90° <input type="checkbox"/> 45°		<input type="checkbox"/> SEAL <input checked="" type="checkbox"/> FULL STRENGTH <input type="checkbox"/> PARTIAL STRENGTH	371.734	mm
10				1750	mm
11				7938	mm

12	MATERIALS			
13	TUBES	SA-179	SELL SIDE :	BODY FLANGE :
14	CHANNEL COVER	SA-106 GRB	NOZZLES: SA-106 GRB	SHELL: SA-266-2
15	CHANNEL	SA-106 GRB	FLANGES: SA-105	CHANNEL: SA-266-2
16	SHELL COVER	SA-516 GR70	TUBE SIDE :	BOLTS SA 193 Gr. B7
17	TUBE SHEET	SA-266-2	NOZZLES: SA-106 GRB	NUTS SA 194 Gr. 2H
18	CROSS BAFFLES	SA-516 GR70	FLANGES: SA-105	GASKET JACKETED METAL
19	SADDEL/LEG	SA-283GR.C		DONE

20	INSULATION			
21			SHELL SIDE	CHANNEL SIDE
22	INSULATION (TYPE / THK)		-	-
23	PAINTING			
24	PRIMER	ZINCETHYL SILICATE (1X70µm)		
25	MID COATING			
26	TOP COATING			

MECHANICAL DESIGN DATA

EXPANSION JOINT: YES NO BY MFR. MATERIAL:

29			SHELL 1	SHELL 2	TUBE SHEET	LIFE CYCLES NO.
30	MEAN SHELL METAL TEMPERATURE	°C	61.66	-	-	GIVEN IN DWG
31	MEAN TUBE METAL TEMPERATURE	°C	48.25	-	-	
32	MINIMUM TUBE METAL TEMPERATURE	°C	40.06	-	-	
33	MAXIMUM TUBE METAL TEMPERATURE	°C	54.74	-	-	

WEIGHT EMPTY: 1439 kg HYDROTEST: 1840 kg

vendor is full responsible for these data

please specify weight with full of liquid



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Comment on previous revision is not implemented, however it is accepted in reply sheet. Hot side fluid shall be inter from top and exit from bottom of shell.

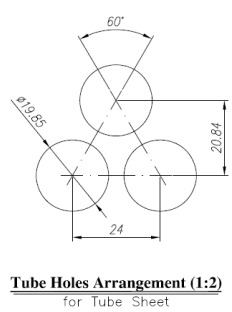
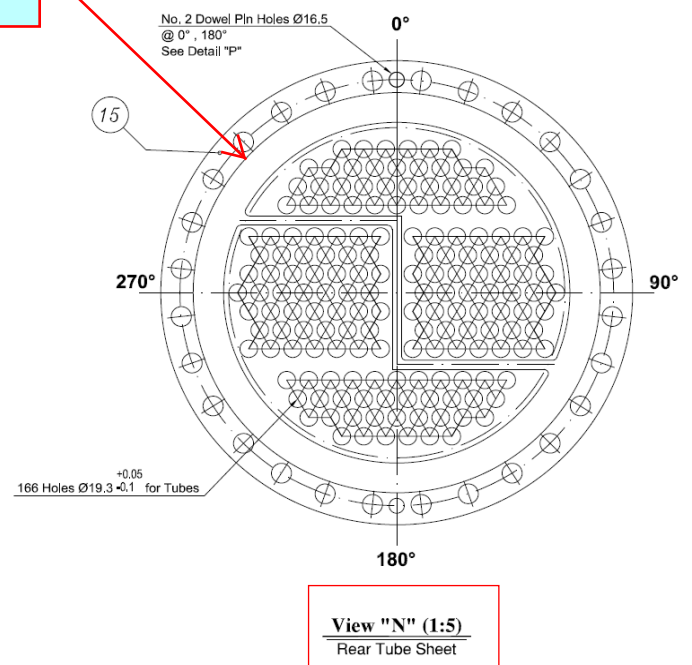
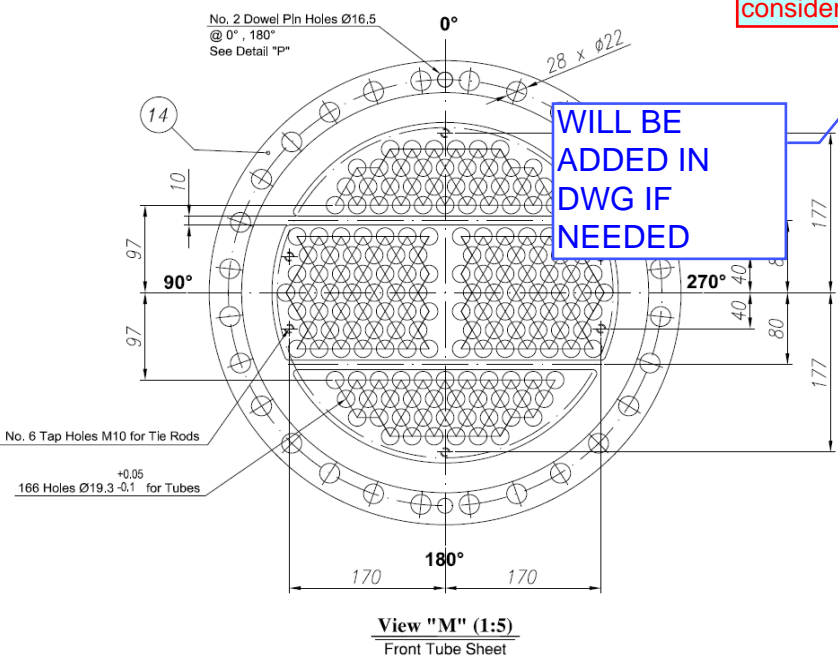
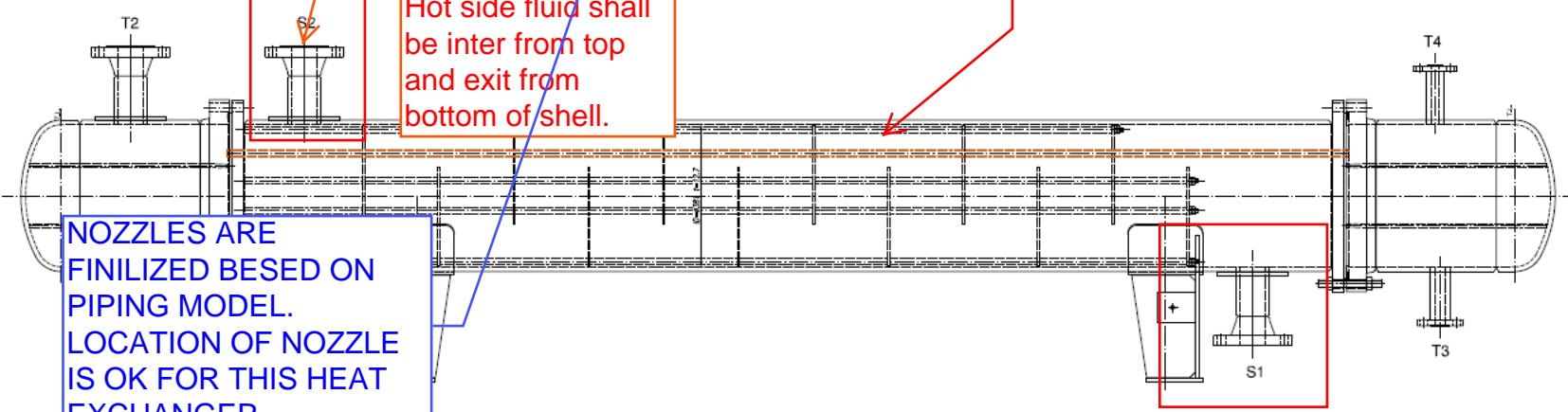
DELETE

please specify view N and M

NOZZLES ARE FINILIZED BASED ON PIPING MODEL. LOCATION OF NOZZLE IS OK FOR THIS HEAT EXCHANGER

jack screw to be considered

WILL BE ADDED IN DWG IF NEEDED



where view sign?

CORRECTED

IT IS OK

See comment at the oil cooler drawing.

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S3	1	DRAIN	2"	300#	RF	200
S2	1	OIL OUTLET	3"	300#	RF	200
S1	1	OIL INLET	3"	300#	RF	200
T4	1	VENT	3/4"	300#	RF	200
T3	1	DRAIN	1"	300#	RF	200
T2	1	JACKETED WATER OUTLET	3"	300#	RF	200
T1	1	JACKETED WATER INLET	3"	300#	RF	200
Tag.	No.	Description	Size	Rating	Facing	PROJECTION (mm)