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	DEHDASHT PETROCHEMICAL INDUSTRY COMPANY DEHDASHT HIGH DENSITY POLYETHYLENE PROJECT	
	DOCUMENT TITLE: Economizer Data Sheet	POI: IFA
Contract No.: DPIC/98-12	DOCUMENT NUMBER: DPIC9812-000-VD-1002-ME-DS-0076	Rev. No.: D1


SINCE THE EVAPORATION IS IN TUBE SIDE MIST FLOW IS HAPPEN NEAR THE OUTLET WHEN MOST OF THE LIQUID EVAPORATED. WE HAVE A LOT A OF EXPERIECNC FOR SUCH A THIS TYPE OF ECONOMIZER.

DOCUMENT TITLE:

Economizer Data Sheet (E-PK6101-3)

Following problems to be detected in this design. Please recheck and resolve.

- 1- Dry wall mist flow is expected for the boiling fluid. This condition may lead to high tube wall temperatures.
- 2- Film and transition boiling regime has been predicted.

PURCHASER'S COMMENT/APPROVAL STATUS					Purchaser: NARGAN
1	AP: Approved (Released for Manufacturing)				Requisition No.: DPIC98-12-001-000-ME-MR-4150-0001-D1
✗	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-0076-D1
		Date: 12.01.2022	Signature: A.AB		
					
D1	25.Dec.21	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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 		DEHDASHT PETROCHEMICAL INDUSTRY COMPANY POLYETHYLENE GLYCOL (POLYET)					
DOCUMENT TITLE: Economizer Data Sheet						POI: IFA	
Contract No.: DPIC/98-12		DOCUMENT NUMBER: DPIC9812-000-VD-1002-ME-DS-0076				Rev. No.: D1	
1	SERVICE	ECONOMIZER				ITEM	E-PK6101-3
2	DIAM. X LENGTH	581 X 6000 mm	MOUNTIN	HORIZONTAL		TYPE	BEM
3	NO. OF UNIT	1	SURFACE PER UNIT				1
4	SHELLS PER UNIT	1	SURFACE PER SHELL				1
5	TEMA	DESIGN IS OK. WE HAVE ENOUGH OVER DESIGN FOR THIS HEAT EXCHANGER.				CODE	TEMA. 9TH ED.
PERFORMANCE							
7		SHELL SIDE		TUBE SIDE		DE	
8	FLUID CIRCULATED	PROPYLENE		PROPYLENE			
9	FLUID QUANTITY, TOT	19500.0		7038.39			
10		IN	OUT	IN	OUT		
11	VAPOUR	CORRECTED		2041.13	7038.39		
12	LIQUID	19500	19500			Based on PFD flow rate shall be 8123kg/h.	
13	NON CONDENSABLES	-	-				
14	TEMPERATURE	48.55	16	12.37	15		
15	DENSITY at T and P (Vap./Liq.)	461.4	520.94	17.36 / 526.76	17.11		
16	VISCOSITY at T and P (Vap./Liq.)	CORRECTED 0.0598		0.1062	0.0162 / 0.1081	0.0165 / 0.0167	
17	MOLECULAR WEIGHT, Vap			0.1062			
18	SPECIFIC HEAT (Vap./Liq.)	3.332	2.5836	1.65 / 2.578	1.655		
19	THERMAL CONDUCTIVITY (Vap./Liq.)	0.0897	1061	0.0162 / 0.1081	0.0165 / 0.0167		
20	LATENT HEAT			360	360		
21	INLET PRESSURE (abs)			8.3	2.98		
22	VELOCITY (Mean/Max)			3.42			
23	PRESSURE DROP (Allowable/Calculated)	0.02	0.02	0.1	0.038	0.049	
24	FOULING RESISTANCE (Min)			0.00017	0.00017		
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 DUTY	508.3	388.93	388.11	14.2	14.2	
27	TEMPERATURE CORRECTION FACTOR	314.69	CALCULATED: 353.27	CLEAN: 409.33	W/m²-K		
CONSTRUCTION							
29	DESIGN PRESSURE	barg		23	based on thermal datasheet "-45" is specified as design temperature, please clarify		23
30	VACUUM PRESSURE	barg					-1.01
31	TEST PRESSURE			29.9			29.9
32	DESIGN TEMPERATURE			125	to be specified there is discrepancy with mechanical calc		125
33	MIN. DESIGN METAL TEMPERATURE						-45
34	NUMBER PASSES PER SHELL	-45/135		1			3
35	CORROSION ALLOWANCE			3			3
36	PARTICULAR SERVICE	CORRECTED		COMMENT IS NOT CLEAR			
37	PROVIDE X-RAY					FULL	
38	PROVIDE STRESS RELIEVING			<input type="checkbox"/> CHANNEL <input type="checkbox"/> BUNDLE <input type="checkbox"/> SHELL			

PLEASE CHECK THE LAST REVITON OF PFD.

There is discrepancy on TEMA type between PFD and DSH. PFD shall be updated.

PLEASE CHECK THE LAST REVITON OF PFD.

There is discrepancy on Fluid allocation between PFD and DSH. PFD shall be updated.

PLEASE CHECK THE LAST REVITON OF THERMAL CALCULATION.

DESIGN IS OK. WE HAVE ENOUGH OVER DESIGN FOR THIS HEAT EXCHANGER.

based on thermal datasheet "7042.97"

As per Doc. No. DPC-PR-CRT-0001 equipment design criteria (MR attachment) 10% safety overdesign shall be considered on design case for heat exchanger sizing. Please consider 10% over design on flow same as previous revision.

Based on PFD flow rate shall be 8123kg/h.

PLEASE CHECK THE LAST REVITON OF THERMAL CALCULATION.

PLEASE CHECK THE LAST REVITON OF THERMAL CALCULATION.

PLEASE CHECK THE LAST REVITON OF THERMAL CALCULATION.

PLEASE CHECK THE LAST REVITON OF FILTER DATA SHEET.

Please recheck the data. Upstream filter design pressure is 25barg.

to be specified there is discrepancy with mechanical calc



DEHDASHT PETROCHEMICAL INDUSTRY COMPANY



DEHDASHT HIGH DENSITY POLYETHYLENE PROJECT

CORRECTED



DOCUMENT TITLE: Economizer Data Sheet

CORRECTED

POI: IFA

Cont

based on process comment on thermal datasheet "2.77" as minimum

2.77 based on thermal calculation data sheet.

12-000-VD-1002-ME-DS-0076

CORRECTED

Rev. No.: 1

18 based on thermal calculation data sheet.

CONSTRUCTION OF ONE SHELL

2	TUBE TYPE :	<input checked="" type="checkbox"/> PLAIN <input type="checkbox"/> FINNED	SHELL OD	601	610	mm	BAFFLE T	segmental
3	TUBE OD:	25.4	mm	SHELL	581	mm	ORIENTATION	Horizontal
4	TUBE THK (avg):	2.6	mm	IMPINGEMENT PROTECTION	NO		BAFFLE NO.	20
5		6000	mm	OUTER TUBE LIMIT	566.949	mm	BAFFLE THK.	6
6	TUBE NO:	241	#	TUBESHEET THK	62	mm	BAFFLE CUT	28.5
7	PITCH:	32	mm	WELD			INLET SPACING	300
8	<input checked="" type="checkbox"/> 30°	<input type="checkbox"/> 60°		<input checked="" type="checkbox"/> WELD	<input checked="" type="checkbox"/> EXPAND	<input checked="" type="checkbox"/> GROOVES		412
9	<input type="checkbox"/> 90°	<input type="checkbox"/> 45°		TUBE TO TUBESHEET WELD TYPE			CLEARANCE TO SHELL	4.76
10				<input type="checkbox"/> SEAL	<input checked="" type="checkbox"/> FULL STRENGTH		CLEARANCE TO TUBE	
11					<input type="checkbox"/> PARTIAL STRENGTH			

CORRECTED

to be specified in thermal datasheet

will be finalized after revising comment

GIVEN IN THIS DADA SHEET

discrepancy with drawing

MATERIALS

13	TUBES	SA-334 GR 6 SEAMLESS	SELL SIDE :	BODY FLANGE :
14	SHELL	SA-516 GR70N	NOZZLES: SA-333 GR6	SHELL: SA-350 LF2
15	CHANNEL	SA-516 GR70N	FLANGES: SA-350 LF2	CHANNEL: SA-350 LF2
16	SHELL COVER	SA-516 GR70N	TUBE SIDE :	BOLTS SA320 L7
17	TUBE SHEET	SA-350 LF2	NOZZLES: SA-333 GR6	NUTS SA 194 Gr. 4
18	CROSS BAFFLES	SA-516 GR70N	FLANGES: SA-350 LF2	GASKET JACKETED METAL
19	SADDEL/LEG	SA-283GR.C		

channel

DONE

please specify

INSULATION AND PAINTING

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

28	EXPANSION JOINTS	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	BY MFR.	MATERIAL:		
29			SHELL 1	SHELL 2	TUBE SHEET	LIFE CYCLES NO
30	MEAN SHELL METAL TEMPERATURE	C	24.32	-	-	-
31	MEAN TUBE METAL TEMPERATURE	C	18.44	-	-	-
32	MINIMUM TUBE METAL TEMPERATURE	C	13.05	-	-	-
33	MAXIMUM TUBE METAL TEMPERATURE	°C	43.21	-	-	-
34	WEIGHT		EMPTY: 4058	kg	HYDROTEST: 5602	kg

DESIGN IS OK

vendor is full responsible for these temperature and worst case to be considered in calculation of tubesheet

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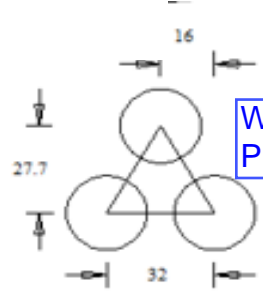
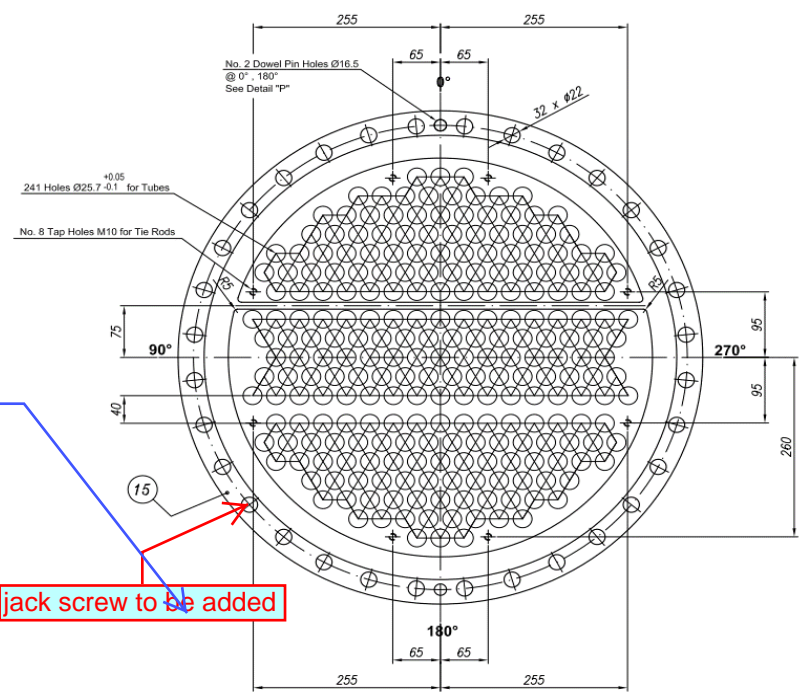
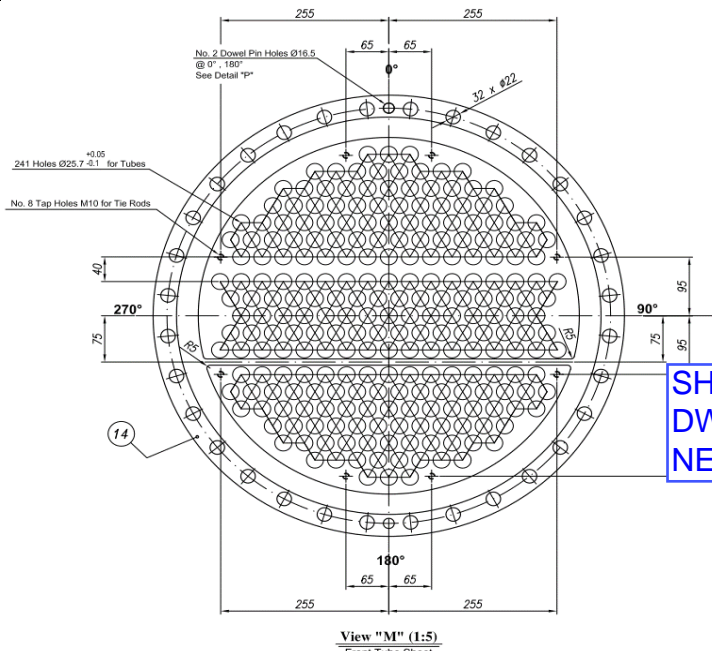
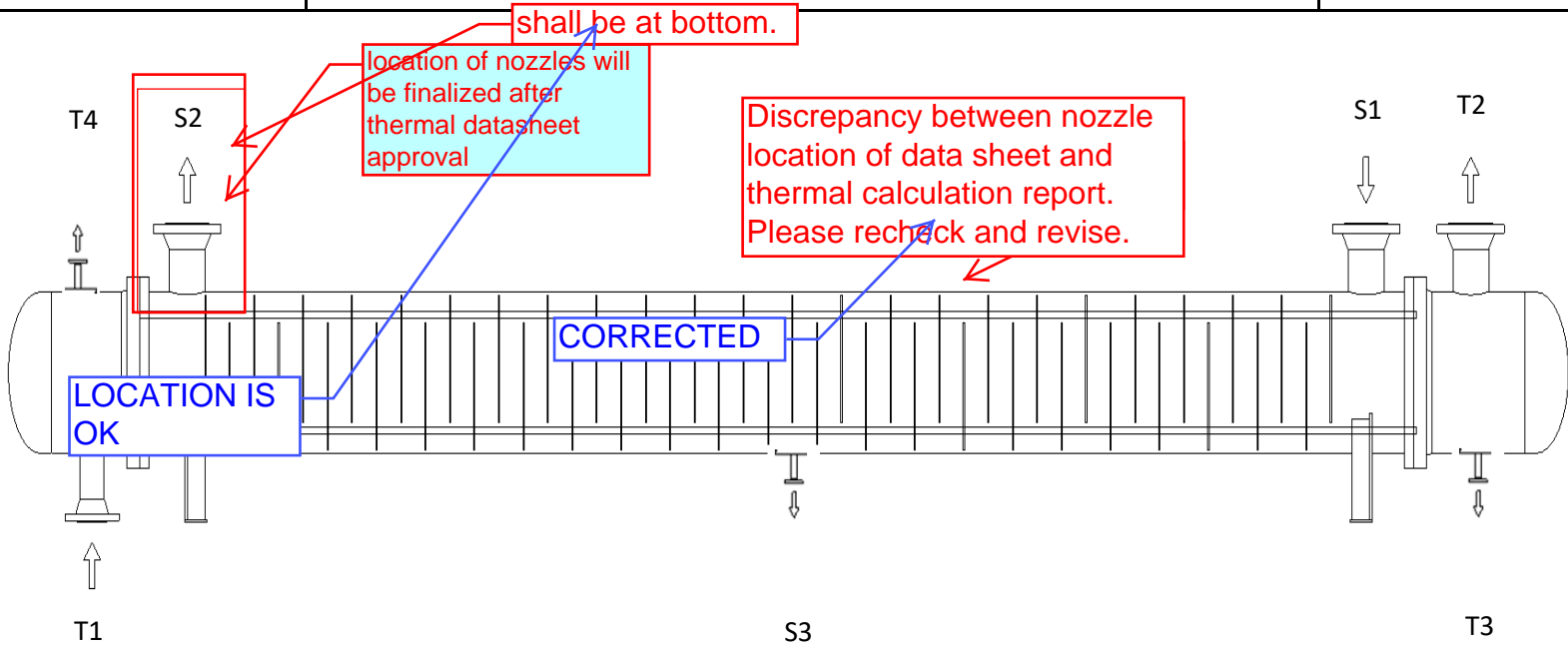
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SHOWN IN DWG IF NEEDED

jack screw to be added

WHAT IS THE PROBLEM?

to be revised

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T3	1	DRAIN	1"	300#	RF	200
T4	1	VENT	3/4"	300#	RF	200
S3	1	DRAIN	2"	300#	RF	200
S2	1	PROPYLENE OUTLET	6"	300#	RF	200
S1	1	PROPYLENE INLET	6"	300#	RF	200
T2	1	PROPYLENE OUTLET	6"	300#	RF	200
T1	1	PROPYLENE INLET	4"	300#	RF	200
Tag.	No.	Description	Size	Rating	Facing	PROJECTION (mm)