PPI / NARGAN	DEHDASHT PETROCHEMICAL INDUSTRY COMPANY DEHDASHT HIGH DENSITY POLYETHYLENE PROJECT	PGPIC
	DOCUMENT TITLE: Economizer Data Sheet	POI: IFA / Rev. : D0
Contract No.: DPIC/98-12	DOCUMENT NUMBER: DPIC9812-000-VD-1002-ME-DS-0076	Sheet 1 of 5

Instrument Nozzles will be checked after finalization of P&ID

Economizer Data Sheet

no instrument nozzle on this exchanger

PURCHASER'S COMMENT/APPROVAL STATUS		Purchaser: NARGAN
1	AP: Approved (Released for Manufacturing)	Requisition No.: DPIC98-12-001-000-ME-MR-4150-0001-D1
2	AN: Approved With Minor Comments (Fabrication may Proceed)	
X	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-D0
Date: 20.11.2021	Signature: A.AB	

REV	DATE ISSUE	PREPARED	CHECKED	APPROVED
D0	30.Oct.21	A.VOSOUGH	DR.A.NEJATI	DR.A.NEJATI

KASRAVAND Engineering & Construction

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1	x				
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DEHDASHT PETROCHEMICAL INDUSTRY COMPANY

DEHDASHT HIGH DENSITY POLYETHYLENE PROJECT

T TITLE: Economizer Data Sheet | **POI: IFA** | **Rev. : D0**

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Note:
1- Please specify the thickness of shell.

WILL BE GIVEN IN MECH. DWG

ARRANGMENT IS OK. ALL DISCREPANCY WILL BE CHECKED

according to DPIC-12-001/000-4150-ME-PFD-027 there is discrepancy at the shell side. It's consider that error to arrangement of shell and tube side.

1	SERVICE		ECONOMIZER			ITEM	E-PK6101-3	
2	DIAM. X LENGTH	591 X 6000 mm	MOUNTIN	HORIZONTAL		TYPE	BEM	
3		1	SURFA		m²	IN PARALLEL	1	
4	R UNIT	1	SURFA		m²	IN SERIES	1	
5	TEMA CLASS	R	REQUI			CODE	TEMA. 9TH ED.	
6								
7				SHELL SIDE		TUBE SIDE		
8	FLUID CIRCULATED			PROPYLENE		PROPYLENE		
9	FLUID QUANTITY, TC		kg/h	19500 x 1.1		7431x 1.1		
10				IN	OUT	IN	OUT	
11	VAPOUR		kg/h	-	-	2370	8174	
12	LIQUID		kg/h	21450	21450	5804	-	
13	NON CONDENSABLES		kg/h	-	-	-	-	
14	TEMPERATURE		°C	48.55	14	12.37	15	
15	DENSITY at T and P (Vap./Liq.)		kg/m³	/ 461.41	/ 524.12	17.36 / 526.76	17.02 /	
16	VISCOSITY at T and P (Vap./Liq.)		cP	/ 0.0598	/ 0.0915	0.0087 / 0.0933	0.0087 /	
17	MOLECULAR WEIGHT,Vap					42.08	42.08	
18	SPECIFIC HEAT (Vap./Liq.)		kJ/kg.K	/ 3.332	/ 2.558	1.65 / 2.578	1.655 /	
19	THERMAL CONDUCTIVITY (Vap./Liq.)		W/m.K	/ 0.0897	0 / 0.1072	0.0162 / 0.1081	0.0165 /	
20	LATENT HEAT		kj/kg			360	360	
21	INLET PRESSURE (abs)		bar	19.940	19.85	8.3	8.25	
22	VELOCITY (Mean/Max)		m/s	0.33 /	0.39	2.36 /	5.14	
23	PRESSURE DROP (Allowable/Calculated)		bar	0.25	0.08738	0.2	0.04763	
24	FOULING RESISTANCE (Min)		m²·K/W	0.00017		0.00017	0.00021	Ao based
25	TYPE OF CLEANING MAINTENANCE			☐ NONE ☑ MECH ☐ CHEM.		☐ NONE ☑ MECH ☐ CHEM.		
26	HEAT EXCHANGED	590.2	kW	MTD (CORRECTED)		11.81	°C	
27	TRANSFER RATE: SERVICE:	42		512.7	CLEAN:	638.3	W/m²·K	
28				TRUCTION				
29	DESIGN PRESSURE		barg	23		23		
30	VACUUM PRESSURE		barg	-1.01		-1.01		
31	TEST PRESSURE		barg	29.9		29.9		
32	DESIGN TEMPERATURE		°C	120		120		
33	MIN. DESIGN METAL TEMPERATURE		°C	-45		-45		
34	NUMBER PASSES PER SI			1		3		
35	CORROSION ALLOWANCE			3		3		
36	PARTICULAR SERVICE			-		-		
37	PROVIDE X-RAY			FULL		FULL		
38	PROVIDE STRESS RELIEVING			☐ CHANNEL	☐ BUNDLE	☐ SHELL		

will be finalized after receiving compressor data sheet

OK

NO NEEDED

Please check which one shall be done

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CONSTRUCTION OF ONE SHELL

TUBE TYPE :	☑ PLAIN ☐ FINNED		SHELL OD	611	mm	BAFFLE TYPE	Single segmental	
TUBE OD:	25.4	mm	SHELL ID	591	mm	ORIENTATION	Horizontal	
TUBE THK (avg):	2.6	mm	IMPINGEMENT PROTECTION	NO		BAFFLE NO.	47	#
TUBE LENGTH:	6000	mm	OUTER TUBE LIMIT	576.9	mm	BAFFLE THK.	5	mm
TUBE NO:	249	#	TUBESHEET THK	45	mm	BAFFLE CUT	15	%
PITCH:	32	mm	TUBE TO TUBESHEET JOINT			C/C SPACING	115	mm
☑ 30° ☐ 60°			☑ WELD ☑ EXPAND ☑ GROOVES			INLET SPACING	307	mm
☐ 90° ☐ 45°			TUBE TO TUBESHEET WELD TYPE			CLEARANCE TO SHELL	4.76	mm
			☐ SEAL ☑ FULL STRENGTH ☐ PARTIAL STRENGTH			CLEARANCE TO TUBE	0.79	mm

MATERIALS

TUBES	SA-334 GR 6 SEAMLESS	SELL SIDE :		BODY FLANGE :		
SHELL	SA-516 GR70N		NOZZLES: SA-333 GR6		SHELL:	SA-350 LF2
CHANNEL	SA-516 GR70N		FLANGES: SA-350 LF2		CHANNEL:	SA-350 LF2
SHELL COVER	SA-516 GR70N	TUBE SIDE :		BOLTS		SA320 L7
TUBE S DONE	LF2		NOZZLES: SA-333 GR6	NUTS		SA 194 Gr. 4
CROSS BAFFLES	SA-516 GR70N		FLANGES: SA-350 LF2	GASKET		JACKETED METAL
SADDEL/LEG	SA-283GR.C					
please specify						

INSULATION AND PAINTING

	SHELL SIDE	CHANNEL SIDE
INSULATION (TYPE / THK)	-	-
PAINTING		
PRIMER	???	???
MID COATING	???	???
TOP COATING	???	???

MECHANICAL DESIGN DATA

EXPANSION JOINT: ☐ YES ☑ NO ☐ BY MFR. MATERIAL:

		SHELL 1	SHELL 2	TUBE SHEET	LIFE CYCLES NO
MEAN SHELL METAL TEMPERATURE	°C	24.32	-	-	-
MEAN TUBE METAL TEMPERATURE	°C	18.44	-	-	-
MINIMUM TUBE METAL TEMPERATURE	°C	13.05	-	-	-
MAXIMUM TUBE METAL TEMPERATURE	°C	43.21	-	-	-

WEIGHT — EMPTY: 4010 kg — HYDROTEST: 5509 kg

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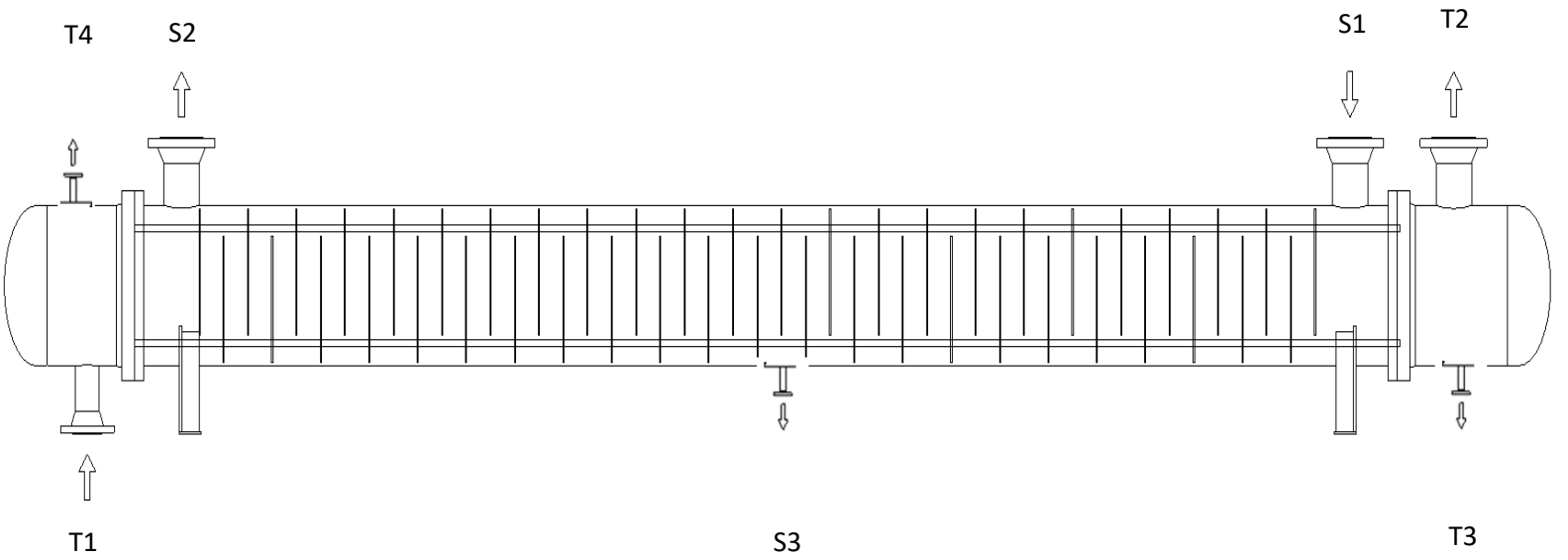

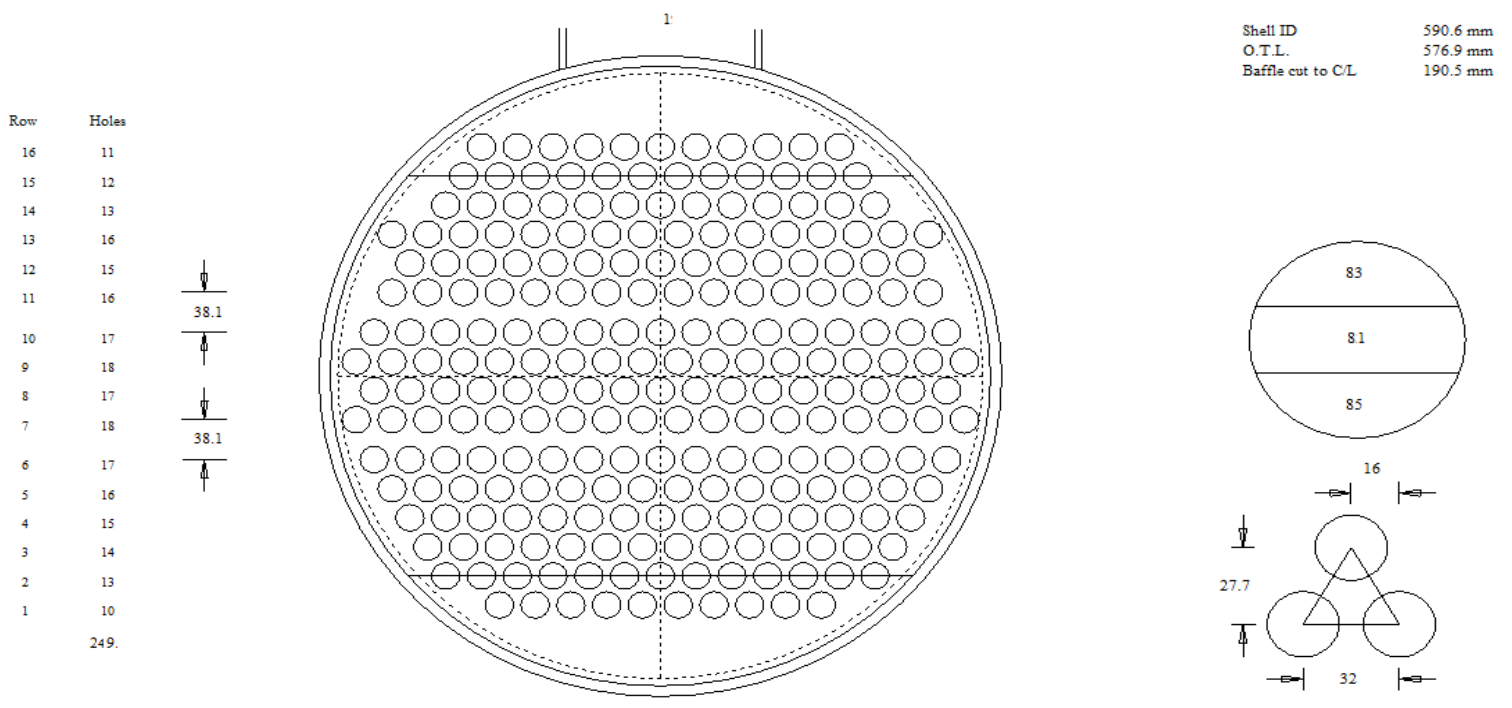

Tag.	No.	Description	Size	Rating	Facing	PROJECTION (mm)
T3	1	DRAIN	1"	300#	RF	200
T4	1	VENT	3/4"	300#	RF	200
S3	1	DRAIN	2"	300#	RF	200
S2	1	PROPYLENE OUTLET	6"	300#	RF	200
S1	1	PROPYLENE INLET	6"	300#	RF	200
T2	1	PROPYLENE OUTLET	6"	300#	RF	200
T1	1	PROPYLENE INLET	4"	300#	RF	200

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