PPI / NARGAN	DEHDASHT PETROCHEMICAL INDUSTRY COMPANY DEHDASHT HIGH DENSITY POLYETHYLENE PROJECT	PGPIC
	DOCUMENT TITLE: Oil Cooler Drawing	POI: IFA
Contract No.: DPIC/98-12	DOCUMENT No: DPIC9812-000-VD-1002-ME-DWG-0017	Rev. No.: D1

DOCUMENT TITLE:

Oil Cooler Drawing

(E-PK6101-1A/B)

PURCHASER'S COMMENT/APPROVAL STATUS		Purchaser: NARGAN
1	AP: Approved (Released for Manufacturing)	Requisition No.: DPIC98-12-001-000-ME-MR-4150-0001-D1
X	AN: Approved With Minor Comments (Fabrication may Proceed)	
3	NF: Approved With Comments (Fabrication not Proceed)	Item No. (Tag No.): E-PK6101-1A/B
4	RJ: Rejected	
5	NR: Not be Returned	Vendor Doc. No.:DPIC9812-000-VD-1002-ME-DWG-0017-D1
Date: 06.03.2022	Signature: A.AB	

REV	DATE ISSUE	PREPARED	CHECKED	APPROVED
D1	06.Feb.2022	A.VOSOUGH	DR.A.NEJATI	DR.A.NEJATI
D0	23.Dec.21	A.VOSOUGH	DR.A.NEJATI	DR.A.NEJATI

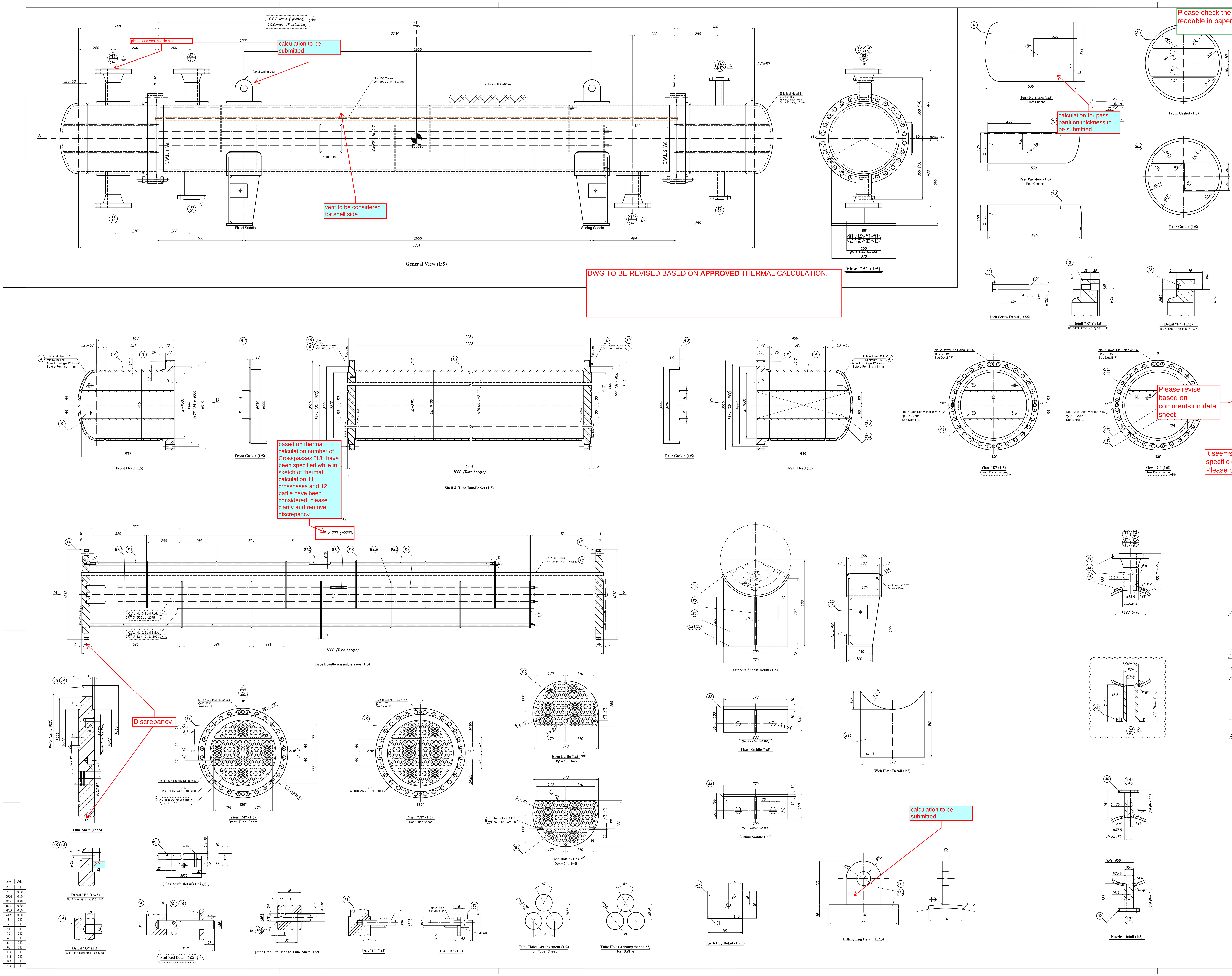
KASRAVAND Engineering & Construction

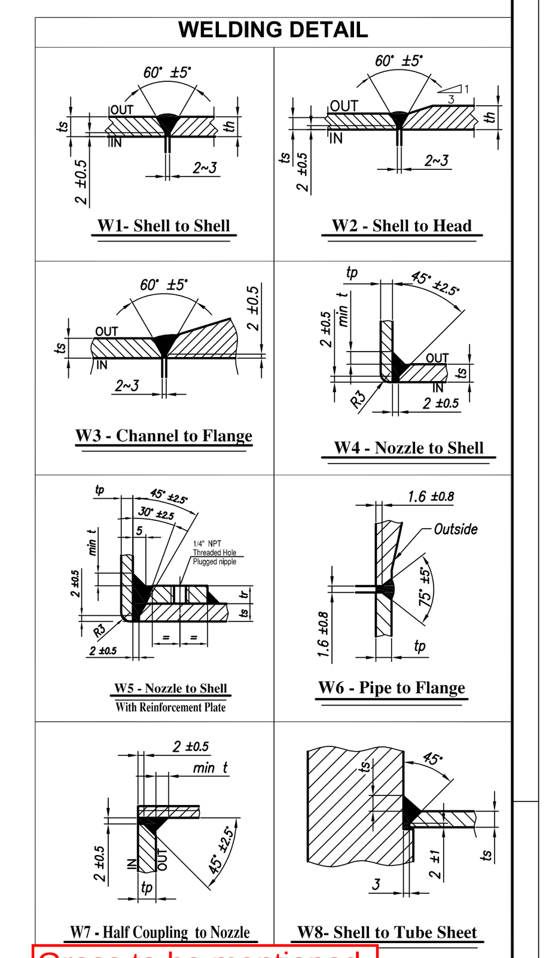
PPI / NARGAN	**DEHDASHT PETROCHEMICAL INDUSTRY COMPANY** **DEHDASHT HIGH DENSITY POLYETHYLENE PROJECT**	PGPIC
	DOCUMENT TITLE: Oil Cooler Drawing	**POI: IFA**
Contract No.: DPIC/98-12	**DOCUMENT No: DPIC9812-000-VD-1002-ME-DWG-0017**	**Rev. No.: D1**

Page	Rev-D0	Rev-D1	Rev-D2	Rev-D3	Rev-D4
1	x	x			
2	x	x			
3	x	x			
4	x	x			
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					
31					
32					
33					
34					
35					

Page	Rev-D0	Rev-D1	Rev-D2	Rev-D3	Rev-D4
36					
37					
38					
39					
40					
41					
42					
43					
44					
45					
46					
47					
48					
49					
50					
51					
52					
53					
54					
55					
56					
57					
58					
59					
60					
61					
62					
63					
64					
65					
66					
67					
68					
69					
70					

Please check the scale of this document. This document is not readable in paper size A3.





Gross to be mentioned.

NOZZLE DATA

Mark No.	QTY	Size PIPE (COUPLING)	Sch. / Thk. PIPE (COUPLING)	Rating FLANGE	Type FLANGE	Face FLANGE	Proj. From C.L. / T.L.	PAD OD	PAD Thk.	Description	Remark (NOTE)
S1	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	400	ø190	10	Inlet	–
S2	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	400	ø190	10	Outlet	–
S3	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
T1	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
T2	1	3"	SCH 160/–	300 #	W.N.	R.F.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
T3	1	1"	–/14.3	300 #	L.W.N.	R.F.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
T4	1	3/4"	–/14.25	300 #	L.W.N.	R.F.	350	–	–	VENT	–

Discrepancy with data sheet

Discrepancy with data sheet

DESIGN DATA

	SHELL SIDE	TUBE SIDE		
FLUID	OIL	JACKETED WATER	SURFACE AREA (m^2)	29.8
OPERATING PRESS. (MAX) (barg)	21.9	6.9	RADIOGRAPHY (SHELL/HEAD/ NOZZLE)	FULL/FULL/FULL
IN / OUT OPERATING TEMP. (°C)	80.3 / 50	37 / 45	JOINT EFFICIENCY (HEAD / SHELL / NOZZLE)	1 / 1 / 1
DESIGN CODE (CLASS , TYPE)	ASME SEC.VIII DIV.1/TEMA-R		EARTHQUAKE / SOIL TYPE / I	ASCE7-2010 ,I=1.25 ,Fa=1 ,Fv=1.3 ,Ss=0.9 ,S1=0.537 Sd1=0.39 , Sds=0.624 , ap=0 , z/h=0
INTERNAL DESIGN PRESS. (barg)	25	25	WIND VELOCITY (Km/h) / EXPOSURE / IW	ASCE7-2010-200Km/h /C /1
DESIGN TEMPERATURE (°C)	120	190	PAINTING	ACC. TO SPEC
EXTERNAL DESIGN PRESS. (barg)	–	–	INSULATION / TYPE / THK. (mm)	YES/PERSONNEL PROTECTION/80
HYDROSTATIC TEST PRESSURE (barg)	32.5	32.5	FIREPROOFING / THICKNESS (mm)	–
M.D.M.T. @ D.P. / M.A.T. (°C)	–10	–10	NO. OF PASS	4
M.A.W.P. (Hot & Corroded) (barg)	–	–	NO. OF TUBE	166
CORROSION ALLOWANCE (mm)	3	3	TUBE & TUBE SHEET JOINT	Weld & Expand
FLUID DENSITY (kg/m^3)	0.886	0.998	EXCHANGER TYPE	BEM
IMPACT TEST	NO	NO		
POST WELD HEAT TREATMENT	NO	NO		

Please revise based on comments on data sheet

Discrepancy with data sheet

It seems they are specific gravity. Please clarify.

MAX. ALLOWABLE NOZ[illegible]

NOZZLE MARK NO.	SIZE	F_A	[illegible]	[illegible]	[illegible]	[illegible]	M_L
S1,S2,T1,T2	3"	3200	3200	3200	1300	1100	1100
S3	2"	2000	2000	2000	500	400	400
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-

GENERAL NOTES

(1) All dimensions are in millimeters unless otherwise noted.
(2) Projection of nozzles are measured from flange face to center line of vessel or flange face to T.L.
(3) All elevations are measured from bottom T.L. unless otherwise specified .
(4) Bolt holes for flanges shall be straddled to equipment main axis.
(5) Stated thickness is minimum after forming thickness of straight flange of elliptical heads shall be in no case smaller than vessel shell required thickness.
(6) Gasket material : Jacketed Metal Stainless Steel, graphite filler , 3.2 mm Thk .
(7) Full radiographic examination shall be performed for nozzle necks made by plate.
(8) Flange Face finishing shall be smooth with 125 micro inch minimum to 250 micro inch maximum as per ASME B.16.5 for 24" and less .Also ASME B16.47 SERIES B for more than 24".
(9) Packing & marking of loose and spare parts shall be done by vendor
(10) Test pressure calculated as per UG-99b (36) .
(11) All stud bolts shall be supplied tropicalized. (ASTM-B633-SC3-TYPE 2) .
(12) Painting:70 Micron ZINCETHYL SILICATE UP to 200C SA3 Surface Per Partion SA3 .
(13) A reduction scalar factor of 0.7 and 0.6 is considered in the calculation of seismic and wind loads respectively.

LOADING DATA AT BASE

	EARTHQUAKE	WIND
MOMENT (KN.m)	3	2
SHEARING LOAD (KN)	6	4

WEIGHTS

OPERATING WEIGHT (kg)	1819	HYDROSTATIC WEIGHT (kg)	1843
BUNDLE WEIGHT (kg)	575	EMPTY WEIGHT (kg)	1440

PARTS LIST

NO.	PART NAME	MATERIAL	DIMENSION	QTY.	WEIGHT (Kg) UNIT	WEIGHT (Kg) TOTAL	REMARK
1	Shell (Pipe)	SA 106 Gr.BN	16" , SCH. 40 , L=2908	1	358	358	-
2	Ellip. Head 2:1	SA 516 Gr.70N	I.D=381 , S.F=50 , MIN. A.F THK.=12.7	2	28	56	
3	Front & Rear Body Flange	SA 266 Gr. 2N	Ø515 x Ø381 , t=79	2	37	74	-
4	Front Channel (Pipe)	SA 106 Gr.BN	16" , SCH. 40 , L=321	1	39	39	
5	Rear Channel (Pipe)	SA 106 Gr.BN	16" , SCH. 40 , L=321	1	39	39	
6	Pass Partition (Plate)	SA 516 Gr.70N	341 x 530 x 10	2	13.7	27.4	-
7.1	Pass Partition (Plate)	SA 516 Gr.70N	175 x 530 x 10	2	6.5	13	-
7.2	Pass Partition (Plate)	SA 516 Gr.70N	150 x 540 x 10	1	6	6	-
8.1	Gasket (Front & Rear)	Jacketed Metal	Ø441 x Ø411 , t=4.5	1	-	-	See DWG.
8.2	Gasket (Front & Rear)	Jacketed Metal	Ø441 x Ø411 , t=4.5	1	-	-	See DWG.
9	Stud Bolt	SA 193 Gr. B7	3/4" , UNC , L=200	56	0.4	22	-
10	Hex. Nut	SA 194 Gr. 2H	3/4" , UNC	112	0.088	10	-
11	Jack Screw	SA 193 Gr. B8	M16 , L=100	4	0.2	0.8	-
12	Dowel Pin	SA 479 Gr. 304	Ø16 , L=70	4	0.15	0.6	-
15	Tube	SA 179	Ø19.05 , t=2.11 , L=3000	166	2.64	438	3/4" , B.W.G. 14
14	Front Tube Sheet	SA 266 Gr. 2	Ø515 t=47	1	44	44	
15	Rear Tube Sheet	SA 266 Gr. 2	Ø515 t=47	1	44	44	
16.1	Odd Bafffle	SA 516 Gr.70	265 x378 , t=6	6	2.5	15	-
16.2	Even Bafffle	SA 516 Gr.70	265 x378 , t=6	6	2.5	15	-
17.1	Tie rod	SA 36	Ø10 , L=2580	5	3.3	19.8	-
17.2	Tie rod	SA 36	Ø10 , L=2380	1	3	6	-
18.1	Spacer Pipe	SA 106 Gr.B	Pipe 3/8" , Sch. 40 , L=525	1	0.45	0.45	-
18.2	Spacer Pipe	SA 106 Gr.B	Pipe 3/8" , Sch. 40 , L=325	5	0.27	1.4	-
18.3	Spacer Pipe	SA 106 Gr.B	Pipe 3/8" , Sch. 40 , L=394	10	0.33	3.3	-
18.4	Spacer Pipe	SA 106 Gr.B	Pipe 3/8" , Sch. 40 , L=194	44	0.15	6.6	-
19	Hex. Nut	SA 194 Gr. 2H	M10	12	0.013	0.15	DIN 934
20.1	Seal Rod	SA 36	Ø20 , L=2575	3	6.3	18.9	-
20.2	Seal Strip	SA 516 Gr.70	32 x 10 , L=2050	2	5	10	
21.1	Lifting Lug (Plate)	SA 516 Gr.70	100 x 125 ,t=25	2	2.5	5	-
21.2	Lifting Lug Pad (Plate)	SA 516 Gr.70	100 x 200 ,t=10	2	1.5	3	-
22	Base Plate (Fixed Saddle)	SA 283 Gr. C	150 x 370 x 12	1	5	5	
23	Base Plate (Sliding Saddle)	SA 283 Gr. C	150 x 370 x 12	1	5	5	
24	Web Plate	SA 283 Gr. C	370 x 382 x 10	2	9	18	
25	Rib Plate	SA 283 Gr. C	170 x 275 x 10	2	3	6	
26	Wear Plate	SA 516 Gr.70	200 x 500 x 10	2	7.8	15.6	
27	Earth Lug	SA 240 Gr. 304	80 x 100 x 6	2	0.4	0.8	
28	DELETED	-	-	-	-	-	
29	DELETED	-	-	-	-	-	
30	DELETED	-	-	-	-	-	
31	Flange (S1,S2,T1,T2)	SA 105	3" , W.N. , 300# , R.F. , SCH.160	4	6.8	27.2	ASME B 16.5
32	Pipe (S1,S2,T1,T2)	SA 106 Gr.B	3" , SCH. 160 , L=133	4	2.8	11.2	ASME B 36.10M
34	Pad	SA 516 Gr.70	Ø190 x Ø99 x 10	4	2	8	
35	Flange (S3)	SA 350 LF2	2" , L.W.N. , 300# , R.F. , t=16.6 , L=214	1	8	8	ASME B 16.5
36	Flange (T4)	SA 105	3/4" , L.W.N. , 300# , R.F. L=161	1	1.5	1.5	ASME B 16.5
37	Flange (T3)	SA 105	1" , L.W.N. , 300# , R.F., L=161	1	2	2	ASME B 16.5

TOTAL WEIGHT (KG) 1355

CLIENT: PERSIAN GULF Petrochemical Industries Co. Dehdasht Petrochemical industries Co. DPIC

MC: PERSIAN GULF Petrochemical Industries Co. PGPIC Petrochemical Industries Development Management Company PIDMCO

CONTRACTOR: Petropars Ltd. NARGAN

PROJECT TITLE:
DEHDASHT PETROCHEMICAL INDUSTRY COMPANY
DEHDASHT HIGH DENSITY POLYETHYLENE PROJECT

DRAWING TITLE:
OIL COOLER DRAWING
(E-PK6101-1A/B)

DOCUMENT No: **DPIC9812-000-VD-1002-ME-DWG-0017** SC. SIZE: A0

Proj. Code	Area No.	VD	Material Code	PO No.	Disc. Code	Doc. Type	Serial No.	Rev.	Sheet No.
DPIC9812	000	VD	1002	4150	ME	DWG	0017	D0	3 OF 3

PURCHASER'S COMMENT/APPROVAL STATUS
1. AP: Approved (Released for Manufacturing)
2. AN: Approved With Minor Comments (Fabrication may Proceed)
3. NF: Approved With Comments (Fabrication not Proceed)
4. RJ: Rejected
5. NR: Not be Returned

Date : XX.XX.XX Signature :

PURCHASER:
REQUISITION NO.: DPIC98-12-001-000-ME-MR-4150-0001-D3
ITEM NO. (TAG NO.): PK-6101
VENDOR DOC. NO.: DPIC9812-000-VD-1002-ME DWG-0017-D1

REV.	DATE	DESCRIPTION	PREP'D	CHK'D	APP'D
D1	04-FEV-22	ISSUE FOR APPROVAL	A.VOSOUGH	A.VOSOUGH	DR.A.NEJATI
D0	23-DEC-21	ISSUE FOR APPROVAL	A.VOSOUGH	A.VOSOUGH	DR.A.NEJATI

KASRAVAND CO.