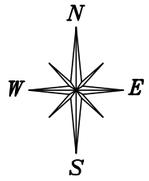
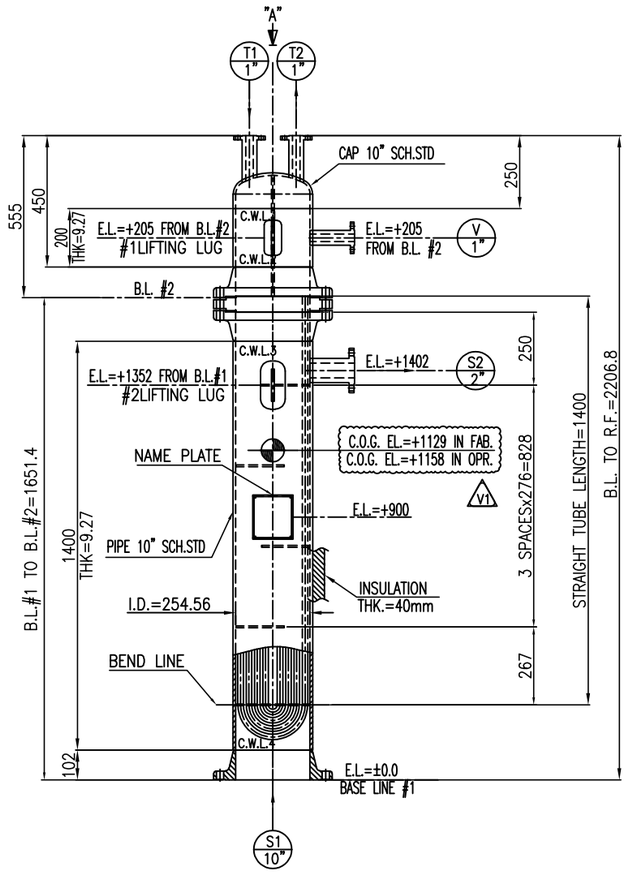
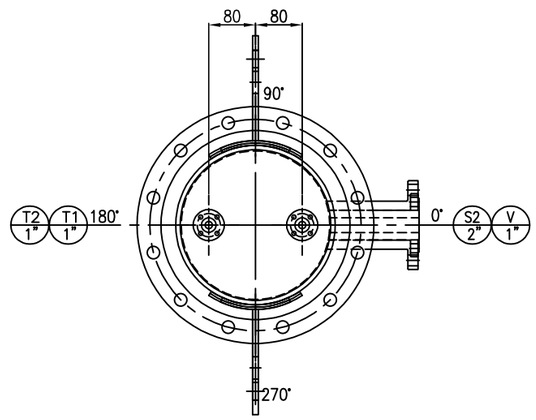




ELEVATION VIEW

SCALE 1:20



VIEW "A"

SCALE 1:10

GENERAL NOTES

1. ALL DIMENSIONS ARE IN MM UNLESS OTHERWISE NOTED.
2. ALL ELEVATIONS ARE SPECIFIED FROM EQUIPMENT T.L. ±0.00
3. ALL THICKNESS SHOWN IN THE DRAWING ARE INTENDED AS MINIMUM AF
4. UNLESS OTHERWISE NOTED OUTSIDE PROJECTIONS OF NOZZLES ARE MEASURED FROM (EXCHANGER) VERTICAL C.L. TO THE FLANGES CONTACT FACE. FACE OF RADIAL FLANGES ON SHELL SHALL BE PERPENDICULAR TO C.L.
5. FLANGES FACING TO BE IN ACCORDANCE WITH ASME B.16.5 FOR 24" OR LESS AND ASME B.16.47 SERIES A FOR LARGER.
6. FLANGES FACE FINISHING ARE SERRATED WITH 125 TO 250 MICRO INCH ROUGHNESS AS PER ASME B16.5 FOR 24" AND LESS. ALSO ASME B16.47 SERIES "A" FOR MORE THAN 24".
7. GASKETS SHALL BE SPIRAL WOUND WITH FLEXIBLE GRAPHITE FILLER 4.5MM, HOOP SS316, INNER & OUTER RING SS316.
8. BOLT HOLES FOR FLANGES SHALL BE STRADDLED TO NORTH–SOUTH AND/OR EQUIPMENT C.L.
9. ALL SHARP CORNERS WILL BE ROUNDED OFF.
10. 0.5 BARG ALLOWABLE PRESSURE DROP HAS BEEN CONSIDERED FOR PASS PARTITION DESIGN.
11. TUBE BUNDLE IS REMOVABLE AND THE CLEARANCE OF BUNDLE TO SHELL IS 3.2 MM IN DIAMETER.
12. UN-FACTORED LOADS HAS BEEN APPLIED FOR LOAD COMBINATION AS PER ASCE-7 2010.
13. FOR MORE SAFETY 10% CONTINGENCY FACTOR IS CONSIDERED ON BASE LOADS CALCULATIONS . SO , OVER LOADS MAY CHANGE THE LOADS & MOMENTS.
14. ALL REINFORCED PAD HAVE 1/4" NPT TELLTAIL HOLE WHICH WILL BE PLUGGED WITH GREASE AFTER THE HYDRO TEST.
15. ALL REINFORCED PAD WILL BE AIR LEAK TESTED AT 1 BARG BY USING SOAP SOLUTION.
16. PAINTING WILL BE PERFORMED BASED ON "SURFACE PREPARATION AND INTERNAL/EXTERNAL PAINTING PROCEDURE DOC. NO. BK-GCS-MF-120-QC-PR-0004"
17. ALL PRESSURE PARTS BUTT WELDED JOINTS ARE FULLY RADIOGRAPHED.
18. ALL WELDS ARE CONTINUOUS UNLESS OTHERWISE NOTED.
19. WHERE IN ISOLATED CASES REINFORCING PADS COVER VESSEL WELD SEAMS THESE WILL BE GROUND FLUSH AND FULLY RADIOGRAPHED FOR A DISTANCE OF 100MM MEASURED EACH SIDE OF THE COVERED WELD AREA PRIOR TO THE ATTACHMENT OF THE PAD.
20. ALL INTERNAL WELDS WILL BE SMOOTH GRINDED.
21. VESSEL HAS BEEN DESIGNED FOR FIELD HYDROTEST IN CORRODED CONDITION.
22. ALL WET PART MATERIALS MEET "SPECIFICATION FOR MATERIAL REQUIREMENTS IN SOUR SERVICE DOC NO. "BK-GNRAL-PEDCO-000-PI-SP-0008"
23. ALL PRESSURE PARTS ARE NORMALIZED AND COMPLY WITH NACE MR0175/ISO 15156.
24. THE EQUIPMENT WILL BE INSTALL ON STILL COLUMN (C-200).
25. THE #1LIFTING LUGS IS ONLY FOR LIFTING OF CHANNEL AND THE #2LIFTING LUGS IS FOR LIFTING OF COMPLETE EXCHANGER.
27. ALL MATERIALS DIRECTED WELDED TO PRESSURE PARTS, IS SAME AS SHELL.

DESIGN DATA

	SHELL SIDE	TUBE SIDE
DESIGN CODE	ASME VIII- DIV I 2019	
SERVICE	REFLUX CONDENSER (E-100)	
TEMA TYPE	BEU	
ORIENTATION/QTY.	VERTICAL/1	
SHELL IN SERIES/PARALLEL	1/1	
SIZE (mm)	254.6x1400	
DESIGN DUTY (W)	7933	
SURFACE GROSS/EFF. (m2)	3.9/3.84	
FLUID	VAPOR	RICH GLYCOL
VOLUME (m3)	0.08	0.02
DENSITY (IN/OUT) (Kg/m3)	0.89 V/0.9 V,960 L	7.1 V,1023 L/6.7 V,1017 L
NUMBER OF PASS	1	2
OPERATING PRESSURE (barg)	0.21	4.81
DESIGN PRESSURE (barg)	6.6	8.5
TEST PRESSURE (HOR./VER.) (barg)	11.35	11.1
MAWP (barg)	11.9	13.2
OPERATING TEMPERATURE (IN/OUT) (°C)	89.3/86.2	62.4/73.6
DESIGN TEMPERATURE (°C)	152	100
MDMT (°C)	+5	+5
MEAN METAL TEMPERATURE (°C)	87.7	83
CORROSION ALLOWANCE (mm)	0	0
RADIOGRAPHY (SHELL/HEAD)	FULL/FULL	FULL/FULL
JOINT EFFICIENCY (SHELL/HEAD)	1/1	1/1
PWHT	NO	NO
STRESS RELIEVING	NO	NO
INSULATION (DENSITY/TYPE/THK.) (mm)	125/HOT/40	125/HOT/40
FIREPROOFING (DENSITY/THK.) (mm)	-/-	-/-
EXTERNAL PAINTING	NOTE 16	NOTE 16
EARTHQUAKE CONDITIONS	ASCE 7-10 : Fa=1, Fv=1.33, Ss=1.125g,S1=0.46g,Site:D,I=1.25, R=3,z/h=1,Sds=1.02g,Sd1=0.385g	
WIND CONDITIONS	ASCE 7-10 : Wind Speed=232km/h, I.F.=1, Surface Roughness=C	

TUBE BUNDLE DATA

TUBE QTY.	22U	BAFFLE TYPE	SINGLE SEGMENTAL
TUBE O.D. (mm)	19.05	BAFFLE ORIENTATION	HORIZONTAL
TUBE THK. (mm)	1.65 (min)	BAFFLE CUT	34.7%
TUBE PITCH (mm)	58.575	BAFFLE/FULL SUPPORT QTY.	4 / 1
OUTER TUBE DIAMETER (mm)	241.8	TIE ROD QTY.	4
TUBE LAYOUT	90°	SEALING RING/ROD QTY.	-
TUBE LENGTH (STRAGHT) (mm)	1400	PASS PARTITION QTY.	1
TUBE TO TUBESHEET JOINT:	EXPANDED & FULL STRENGTH WELD (2GROOVES)		

MATERIAL TABLE

SHELL SIDE		TUBE SIDE	
DESCRIPTION	DESIGNATION	DESCRIPTION	DESIGNATION
BARREL	SA-312 TP316L	BARREL	SA-312 TP316L
COVER HEAD	-	COVER HEAD	SA-403 316L
GIRTH FLANGE	SA-182 F316L	GIRTH FLANGE	SA-182 F316L
NOZZLE NECK (PIPE/PLATE)	SA-312 TP316L/SA-240 316L	NOZZLE NECK (PIPE/PLATE)	SA-312 TP316L/SA-240 316L
NOZZLE FLANGE/FORGING	SA-182 F316L	NOZZLE FLANGE/FORGING	SA-182 F316L
WELDING FITTING	SA-403 316L	WELDING FITTING	SA-403 316L
GENERAL		TUBE BUNDLE	
SUPPORT	-	TUBESHEET	SA-182 F316L
NAME PLATE	S.S.304	TUBE	SA-213 TP316L
PARTITION PLATE	SA-240 316L	BAFFLE & SUPPORT	SA-240 316L
EARTHING LUG	S.S.304	TIE ROD	S.S.304
TEST RING	-	IMPINGEMENT PLATE	-
BOLTS/NUTS MATERIAL		GASKET MATERIAL	
ANCHOR BOLTS	(NOTE 24)	SHELL & CHANNEL NOZZLE FLANGE	(NOTE 7)
EXTERNAL(BOLTS/NUTS)	SA-193 B8M/SA-194 Gr 8M	SHELL & CHANNEL/TUBESHEET	(NOTE 7)
INTERNAL(BOLTS/NUTS)	-		

WEIGHTS (kg)

FABRICATED	391	SHOP HYDROTEST	474
OPERATING	436	FIELD HYDROTEST	485
SHUTDOWN (EMPTY)	402	INTERNALS	-
TUBE BUNDLE	113	LADDER & PLATFORMS	-

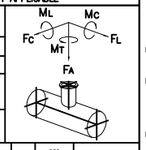
LOADING DATA (NOTE 12 & 13)

WIND		SEISMIC	
SHEAR (N)	MOMENT (N.m)	SHEAR (N)	MOMENT (N.m)
981	1005	2417	3515

ABBREVIATIONS & LEGEND

T.L.	TANGENT LINE	N	NORMALIZED
B.L.	BASE LINE	P.W.H.T.	POST WELD HEAT TREATMENT
C.O.G.	CENTER OF GRAVITY	R.F.	RAISED FACE
EL.	ELEVATION	S.R.	STRESS RELIEVE
F.B.	FLAT BAR	S.F.	STRAIGHT FLANGE
L.L.H.	LIQUID LEVEL HIGH	T.L.	TANGENT LINE
L.L.H.H.	LIQUID LEVEL HIGH HIGH	T.O.G.	TOP OF GROUTING
L.L.L.	LIQUID LEVEL LOW	W.N.	WELDING NECK
L.L.L.L.	LIQUID LEVEL LOW LOW	L.W.L.	LONGITUDINAL WELDING LINE
N.L.L.	NORMAL LIQUID LEVEL	C.W.L.	CIRCUMFERENTIAL WELDING LINE
M.A.W.P.	MAX. ALLOWABLE WORKING PRESSURE	L.W.N.	LONG WELDING NECK
M.D.M.T.	MIN. DESIGN METAL TEMP.	R.T.	RADIOGRAPHY TEST
D.P.	DESIGN PRESSURE	INT.	INTERNAL
J.E.	JOINT EFFICIENCY	EXT.	EXTERNAL
L.	LIQUID	H.P.P.	HIGHEST POINT OF PAVING
V.	VAPOR	THK.	THICKNESS
DWG	DRAWING	N.A.	NOT APPLICABLE

NOZZLE LOAD



NOZZLE	SIZE	RATING	FORCE (KN) FL	FA	FC	MOMENT (KN-m) MC	MT	ML
S1	10"	150#	14	14	10.5	7	10.5	9.1
S2	2"	150#	2.8	2.8	2.1	0.28	0.42	0.36

NOZZLE TABLE

MARK	SERVICE	QTY.	SIZE	RATING	TYPE	FACING	SCH/ THK.	DIA. REINFORCE PAD	THK. REINFORCE PAD	PROJECTION	REMARK
V	VENT	1	1"	150#	L.W.N	R.F.	-/12.8	-	-	280	
T2	RICH GLYCOL OUTLET	1	1"	150#	L.W.N	R.F.	-/12.8	-	-	SEE DWG	
T1	RICH GLYCOL INLET	1	1"	150#	L.W.N	R.F.	-/12.8	-	-	SEE DWG	
S2	VAPOR OUTLET	1	2"	150#	L.W.N	R.F.	-/15.85	-	-	280	
S1	VAPOR INLET	1	10"	150#	W.N.	R.F.	STD/-	-	-	SEE DWG	CONNECT TO REBOILER

REFERENCE DRAWINGS

REFERENCE DRAWINGS	DRAWING NO.
PROCESS DATASHEET FOR GLYCOL REFLUX CONDENSER (E-100)	BK-GCS-MF-120-PR-DS-0009
MECHANICAL CALCULATION BOOK FOR GLYCOL REFLUX CONDENSER (E-100)	BK-GCS-MF-120-ME-CN-0006
DETAILS DRAWING FOR GLYCOL REFLUX CONDENSER (E-100)	BK-GCS-MF-120-ME-DW-0018
NAME PLATE DRAWING FOR GLYCOL REFLUX CONDENSER (E-100)	BK-GCS-MF-120-ME-DW-0019

- ☐ NO COMMENT: Documents/Drawings were checked by PIDEC and further steps can be followed. Upon Putting No Comment on vendor documents by PIDEC, VDMS will lock it and there is not possible to upload any new revision,in this case vendors have to send their request through email to VDC for activating it.
- ☐ COMMENT AS MARKED, Manufacturing May Proceed: Means documents/drawings were checked by PIDEC and comments must be considered by vendor. Fabrication can proceed accordingly.
- ☐ MAJOR COMMENT AS MARKED,Manufacturing shall be on hold for the next revision: Means documents/ drawings were checked by PIDEC and marked comments must be considered by vendor.vendor shall revise documents/drawings as per comments and the new revision documents/drawings must be reissued prior to fabrication.
- ☐ REJECTED, new document with the same revision No. shall be issued : Means documents/drawings were checked and it is not comply with purchase requisition requirements.
- ☐ FOR INFORMATION.

Name:
Signature:
Date:

Req. No.:

Seq. No.:

PIDEC review & comments does not absolve the vendor of the responsibility for the correct design, manufacturing and operation of the equipment.

DE	EXT	
Eng. Phase	Purpose of Distribution (POD)	Purpose of Issue (POI)

REV.	DESCRIPTION	BY	DATE	BY	DATE
		CHECKED		REV. APPR.	
V01	MAR.2025 ISSUED FOR APPROVAL	MFS	M.FAKHARIAN	S.FARAMARZPOUR	**.**
V00	DEC.2024 ISSUED FOR APPROVAL	MFS	M.FAKHARIAN	S.FARAMARZPOUR	**.**
REV.	DATE P.O.I.S	PREP.	CHK.	APP.	AUT.

PROJECT NAME: BINAK OILFIELD DEVELOPMENT/SURFACE FACILITIES GAS COMPRESSOR STATION

PROJECT NO.: 971020

EPC CONTRACTOR: HIRGAN ENERGY – DESIGN & INSPECTION COMPANIES

EPD/EPC CONTRACTOR (GC): PETROIRAN DEVELOPMENT COMPANY PEDCO

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BINAK OILFIELD DEVELOPMENT
SURFACE FACILITIES
GAS COMPRESSOR STATION

DATE	SCALE	DRAWING BY	CHECKED BY	PROJECT ENG.

DRAWING TITLE: GENERAL ARRANGEMENT FOR GLYCOL REFLUX CONDENSER (E-100)

NO CONSTRUCTION PERMITTED UNLESS DRAWING APPROVED

APPROVED FOR CONSTRUCTION | BY: | DATE:

SCALE	SIZE	DRAWING NO.	SHEET NO.	REV.	BUDGET REF.	LOCATION	SIZE	CLASS	SERIAL NO.	SHEET	REVISION
NTS	A3	BK-GCS-MF-120-ME-DW-0017	1 OF 1	V01							