

 NISOC	نگهداشت و افزایش تولید میدان نفتی بینک سطح الارض احداث ردیف تراکم گاز در ایستگاه جمع آوری بینک						 	
	MECHANICAL DATA SHEETS FOR INLET GAS K.O. DRUM							
شماره پیمان:	پروژه	بسته کاری	صادرکننده	تسهیلات	رشته	نوع مدرک	سریال	نسخه
۰۵۳ - ۰۷۳ - ۹۱۸۴	BK	GCS	PEDCO	120	ME	DT	0001	D02
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طرح نگهداشت و افزایش تولید ۲۷ مخزن

MECHANICAL DATA SHEETS FOR INLET GAS K.O. DRUM

نگهداشت و افزایش تولید میدان نفتی بینک

D02	SEP.2022	IFA	H.Adineh	M.Fakharian	M.Mehrshad	
D01	JAN.2022	IFA	H.Adineh	M.Fakharian	M.Mehrshad	
D00	DEC.2021	IFC	H.Adineh	M.Fakharian	M.Mehrshad	
Rev.	Date	Purpose of Issue / Status	Prepared by:	Checked by:	Approved by:	CLIENT Approval

Class: 2

CLIENT Doc. Number: F0Z-708832

status:

IDC: Inter-Discipline Check

IFC: Issued For Comment

IFA: Issued For Approval

AFD: Approved For Design

AFC: Approved For Construction

AFP: Approved For Purchase

AFQ: Approved For Quotation

IFI: Issued For Information

AB-R: As-Built for CLIENT Review

AB-A: As-Built –Approved



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General Notes

D02

Rev.

1. The Asterisk * denotes information and/or confirmation required from VENDOR. The Vendor shall be fully responsible for the complete mechanical design, preparing calculation book and supply of the vessel.

D02

2. Deleted.

D02

D02

3. VENDOR shall include for the services of a independent verification body for mechanical design, stage inspection, testing and stamping of the equipment (if possible).

D02

4. Painting and coating (internal & external) shall be as per project 'Specification for Painting', Doc. No. BK-GNRAL-PEDCO-000-PI-SP-0006 and 'Specification for Lining', Doc. No. BK-GNRAL-PEDCO-000-PI-SP-0007.

D02

5. Flanges shall comply with ASME B16.5. Nozzle bolt holes shall straddle the natural centrelines for horizontal nozzles. VENDOR to confirm maximum allowable nozzle loads and moments (RF: Raised Face, WN: Welding Neck)

D02

6. All reinforcement pads shall have 1/4" (6mm) tell-tale hole and 1/8" (3mm) vent hole as per Standard Detail Drawing For Pressure Vessels and Heat Exchangers', Doc. No. BK-GNRAL-PEDCO-000-ME-DW-0001".

7. Manways shall be supplied complete with blind flange, external grab handles, internal grab handle and ladder rungs, nuts, bolting, gasket and proof load test davits. Davits shall be proof load tested on the vessels to 1.5 x Safe Working Load (SWL) and shall be marked accordingly.

8. All external bolts and nuts shall be hot dip galvanized. Internal bolts and nuts shall be stainless steel.

9. Loads at support base, Shall be calculated and determined by vendor.

10. Access Ladder & Platform to be considered .

D02

11. Deleted.

D02

12. Deleted.

D02

D02

13. The vendor shall be responsible for mechanical strength of the equipment based on mentioned condition in data sheets.

D02

14. All nozzle locations and orientations will be finalized later.

D02

15. Instrumentation items are excluded from vendor's scope of supply.

16. Any changes in material of construction, location & orientation of the nozzles shall be confirmed by client.

17. All materials shall be new and unused.

18. Fabrication tolerances for vessel shall be in accordance with requirement of ASME code.

19. Location and number of lifting lugs on vessels shall be specified on VENDOR drawing.

20. All items shall be clearly match marked against vessel drawings to facilitate erection.

D02

21. Deleted.

D02

22. Vendor shall supply details of all welding connections and give general specification of used materials.

23. For equipment requiring PWHT, final inspection and acceptance by the CLIENT or its nominated representative shall only be undertaken against NDE after PWHT. All weldings shall be made before vessel heat treatment (if any).

D02

24. Equipment packaging, preparation for shipment and delivery shall be in accordance with the project Packing, Marking, Transportation Procedure Doc. No. "BK-GNRAL-PEDCO-000-QC-PR-0045".

D02

25. Specified accessories and attachments shall be supplied by vendor.

26. Gasket shall be spiral wound type, graphite filled with inner ring and outer ring S.S.316.

D02

27. Deleted.

D02

D02

28. Deleted.

29. Two M12 earthing bosses shall be provided on vessel support. Material of Earthing Bosses shall be S.S. 316



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General Notes (Cont'd)

Rev.

30. For standard detail of Earth lug execution refer to the Project "Standard Detail Drawing For Pressure Vessels and Heat Exchangers Doc. No. BK-GNRL-PEDCO-000-ME-DW-0001".
31. Elliptical heads shall be Ultrasonic Tested for lamination after forming.
32. The projection of equipment's nozzles should be considered as per 'Standard Detail Drawing For Pressure Vessels and Heat Exchangers', Doc. No. BK-GNRL-PEDCO-000-ME-DW-0001".
33. The elevation of equipment's nozzles should be specified as follows :
- For vertical vessels : from bottom T.L.
 - For horizontal vessels : from Left T.L.
34. Nozzles and flanges shall be suitably supported and reinforced based on nozzle loads provided in project Specification for Pressure Vessels, Document No. BK-GNRL-PEDCO-000-ME-SP-0001.
35. Prior to sealing the vessel for shipping and storage, the inside surface of the equipment shall be 100% visually inspected. Internal surfaces shall be clean and thoroughly dried. The CLIENT or its nominated representative shall witness the cleanliness of internal surfaces. Flange faces shall be protected by wooden or plastic dummy flanges.
- D02 36. Minimum requirement for pre-commissioning, commissioning, start up and two years operation and spare parts shall be in accordance with document E&C-QC-SP-1.
37. Lifting Lugs / trunnions shall be provided to facilitate a single point lift. If a single point lift cannot be achieved without the use of a lifting beam, then VENDOR shall provide a suitable, certified, lifting beam.
38. Design pressure specified is at top of vessels. VENDOR design shall include static head for vessels flooded with specific gravity of the handled liquid.
39. VENDOR is to maximize shop fabrication based on the following transportation limits:
- Maximum weight: 96 tonnes
 - Maximum load per axle: 12 tonnes
 - Maximum length: 50.0 m
 - Maximum width: 5.0 m
 - Maximum height: 5.2 m
- For items with dimensions and weights greater than the road capacity specified above, VENDOR may be required to split the package into several components.
40. All external attachments directly welded to the pressure part shall be the same material as vessel grade.
41. All dimensions are in "mm" unless otherwise specified.
42. The material shall be in compliance with NACE MR0175/ISO15156 and Specification For Material Requirements in Sour service Document No. BK-GNRL-PEDCO-000-PI-SP-0008.
43. Nozzle loads shall be in accordance with "Specification for pressure vessel, Doc. No.:BK-GNRL-PEDCO-000-ME-SP-0001".
- D02 44. DEMISTER specification will be finalized latter.
45. Welded carbon and carbon manganese steels for vessel shall comply with the following :
- Carbon content shall not exceed 0.23%.
- Based on the ladel analysis, below equation shall be satisfied.
- $$Ceq. = C + Mn/6 + (Cr + Mo + V)/5 + (Cu + Ni)/15 < 0.42 \%$$
46. All carbon steel material shall be fully killed, fine grain treated and supplied in the normalized condition.

D02

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Mech. Data Sheet For Inlet Gas K.O. Drum (V-2105) / sheet 1 of 4

Rev	DATA SHEET					Rev
	1	Description : <i>Inlet Gas K.O. Drum</i>				
	2	Tag No. : <i>V-2105</i>		Quantity : <i>1 Set</i>		
	3	Type : <i>Pressure Vessel</i>				
	4	Process Design Data				
	5	Contents		Corrosive / Erosive	<i>CO2,H2S</i>	
	6	Operating Temp. (°C)	<i>19.23 - 37.17</i>	Liquid Flow (kg/h)	<i>0.33</i>	
	7	Operating Press. (barg)	<i>5.3</i>	Vap. Molec. Weight (kg/kmol)	<i>24.5</i>	
	8	Gas Flow (kg/h)	<i>17833</i>	Liquid Sp. Gravity	<i>0.840 ~1.01</i>	
	9	Liquid Viscosity (cP)	<i>0.691 ~ 1.0126</i>	Lethal / SOUR :	<i>SOUR</i>	
	10	Mechanical Design Data (<i>Note 1</i>)				
	11	Design Temp. (°C)	<i>85</i>	Vessel Orientation	<i>Horizontal</i>	
	12	Design Press. (barg)	<i>9</i>	HHLL (mm)	<i>900</i>	
	13	Test Press. (barg)	<i>Per Code & Spec. Requirements</i>	Nor. Liquid Vol. (m³)		
D02	14	Internal Vacuum (barg)	<i>F.V.</i>	In. Dia. Of Boots (mm)	<i>300</i>	
	15	In. Dia. of Shell (mm)	<i>1500</i>	Boot Length (mm)	<i>600</i>	
	16	Tan/Tan Dim. (mm)	<i>4500</i>	Boot Head Type	<i>2:1 Elliptical</i>	
	17	Vessel Head Type	<i>2:1 Elliptical</i>	Corr. Allowance (mm)	<i>6</i>	
	18	Shell Wall Thk. (mm)	<i>*</i>	Joint Efficiency	<i>0.85 (Shell) / 1 (Head)</i>	
	19	Head Wall Thk. (mm)	<i>*</i>	Ambient Temp.(Min. / Max.) (°C)	<i>5 / 50</i>	
	20	Seismic Design	<i>Site Class : D, Code: ASCE 7-10</i>	MDMT (°C)	<i>5</i>	
	21	Wind Design	<i>Speed: 120 Km/hr (Max.), Code: ASCE 7-10</i>	Insulation Required	<i>NO</i>	
	22	Materials (<i>Note 42, 45, 46</i>)				
D02	23	Code	<i>ASME II / ASTM</i>	Internal Welded and Supports	<i>A 516 Gr. 60N</i>	D02
D02	24	Shell	<i>A 516 Gr. 60N</i>	Nozzle Necks	<i>A 106 Gr.B</i>	D02
D02	25	Heads	<i>A 516 Gr. 60N</i>	Pipes	<i>A 106 Gr.B</i>	D02
	26	Lining	<i>P3</i>	Plates	<i>A 516 Gr. 60N</i>	D02
D02	27	Saddles	<i>A 283 Gr. C</i>	Forgings	<i>A 105N</i>	D02
D02	28	Wear Plate	<i>A 516 Gr. 60N</i>	Flanges	<i>A 105N</i>	D02
D02	29	Stiffening Rings	<i>A 516 Gr. 60N</i>	Fittings	<i>A 234 Gr. WPB</i>	D02
	30	Gaskets	<i>Note 26</i>	Removable Internals	<i>S.S. 316</i>	
D02	31	Lifting Lugs	<i>A 516 Gr.60 N / A 283 Gr. C</i>	External Bolts	<i>A 193 Gr. B7 (8)</i>	D02
D02	32	Reinforcing Pads	<i>A 516 Gr. 60N</i>	Nuts	<i>A 194 Gr. 2H (8)</i>	D02
	33	Ladder & Platform	<i>C.S.</i>	Internal Bolts	<i>A193 Gr. B8M (8)</i>	D02
	34	Gratings	<i>Hot Dip Galvanized C.S.</i>	Nuts	<i>A194 Gr. 8M (8)</i>	D02
D02	35	External Welded Clips and support	<i>A 516 Gr. 60N</i>	Name Plate	<i>S.S. 316</i>	
	36					
	37	REFERENCE STANDARDS & DOCUMENTS				
	38	Mechanical Design Code	<i>ASME Sec VIII Div 1, IPS-G-ME-150</i>			
	39	Specification for Pressure Vessels	<i>BK-GNRAL-PEDCO-000-ME-SP-0001</i>			
	40	Process Basis of Design	<i>BK-GNRAL-PEDCO-000-PR-DB-0001</i>			
	41	Piping & Instrument Diagram (P&ID)	<i>BK-GCS-PEDCO-120-PR-PI-0005</i>			
	42	Specification for Painting	<i>BK-GNRAL-PEDCO-000-PI-SP-0006</i>			
	43	Specification for Insulation	<i>BK-GNRAL-PEDCO-000-PI-SP-0019</i>			
	44	Specification For Material Requirements in Sour service	<i>BK-GNRAL-PEDCO-000-PI-SP-0008</i>			
	45	Fabrication and Inspection Requirements				
	46	Inspection Authority	<i>TPI & Client</i>			
	47	Material Certification	<i>In Accordance with BS EN 10204:2004, Type 3.1, Minimum for Pressure Containing and Attachments</i>			
	48	Hydro Test Medium	<i>Water</i>	Hydro Test Procedure	<i>Yes;Per Code & Spec. Requirements</i>	
	49	Post Weld Heat Treatment	<i>YES (Process Reason)</i>	PT	<i>100%</i>	
	50	MT	<i>100 % on Lifting Lug Fillet Welds</i>	UT	<i>Yes;Per Code & Spec. Requirements</i>	
	51	RT	<i>100 % On T-Joints and Head Joints Butt-Welds,</i>			
	52		<i>Spot On Shell Longitudinal and Circumferential Joints Butt-Welds,</i>			
	53		<i>100 % On Nozzle Neck to Flange & Fabricated Nozzle Neck Longitudinal Butt-Welds,</i>			
	54	RT Report	<i>Yes; Per Code & Spec. Requr.</i>	PT Report	<i>Yes;Per Code & Spec. Requirements</i>	
	55	MT Report	<i>Yes; Per Code & Spec. Requr.</i>	UT Report	<i>Yes;Per Code & Spec. Requirements</i>	
	56	Fabrication Quality Control Plan (With Offer)				<i>Yes</i>
	57	Welding Procedure Review / Approval				<i>Yes</i>
	58	Surface Preparation & Coating				<i>Specification for Painting: Doc. No. "BK-GNRAL-PEDCO-PI-SP-0006"</i>
	59					<i>Specification For Lining: Doc. No.: "BK-GNRAL-PEDCO-000-PI-SP-0007"</i>
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
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Mech. Data Sheet For Inlet Gas K.O. Drum (V-2105) / sheet 2 of 4

Rev.	ACCESSORIES , NOZZLES LIST & LOADS @ BASE												Rev.
	Accessories & Attachments (Note 25, 40) D02												
	Supporting Saddles	YES	Name Plate Bracket	YES									
	Access Ladder & Platform	YES	Name Plate	YES									
D02	Insulation Support	NO	Earthing Lug (Note 29, 30)	YES									
D02	Insulation	NO	Tailing Lug	N/A									
D02	Insulation Cover	NO	Cathodic Protection (Sacrificial Anodes)	YES									D02
D02	Fireproofing Support	NO	Anchor Bolts	NO									D02
	Lifting Lugs	YES	Instrumentations	NO									
	Internal/ External Clips	YES	Skid	N/A									
D02	Tamplate	NO	Support Clips	YES									D02
	Boot	YES	Vortex Breaker	YES									
	Davit for Manhole	YES	Rung & Grip	YES									D02
D02	Internal Lining (By Painting)	NO	Heating Coil	NO									
	Nozzles List (Note 1,5,6,14,32,33) D02												
	Mark	Qty.	Description	Pipe			Flange			Proj. (mm)	Reinforcement		Remarks
				Size	Thk.	Sch.*	Type	Rate.	Face		Thk.	O.D.	
	A	1	Inlet	10"			WN	#150	RF	SEE DWG			
	B1	1	Gas Outlet	10"			WN	#150	RF	SEE DWG			
	B2	1	Liquid Outlet	2"			WN	#150	RF	SEE DWG			
	V1	1	Vent	2"			WN	#150	RF	SEE DWG			
	V2	1	Ventilation	6"			WN	#150	RF	SEE DWG			
	M	1	Manhole	24"			WN	#150	RF	SEE DWG			7
D02	S	1	Utility Connection	2"			WN	#150	RF	SEE DWG			
	D	1	Drain	2"			WN	#150	RF	SEE DWG			
D02	L 1,2	2	Stand Pipe	3"			WN	#150	RF	SEE DWG			
	L 3,4	2	Level Transmitter (HH)	2"			WN	#300	RF	SEE DWG			
	PSV	1	Pressure Safety Valve	2"			WN	#150	RF	SEE DWG			
	P1	1	Pressure Gauge	2"			WN	#300	RF	SEE DWG			
	P2	1	Pressure transmitter	2"			WN	#300	RF	SEE DWG			
	T	1	Temperature gauge (HH)	2"			WN	#300	RF	SEE DWG			
D02	Deleted												
	L 5,6	2	Level Transmitter (H/L)	2"			WN	#300	RF	SEE DWG			
	P3	1	PDIT	2"			WN	#300	RF	SEE DWG			
Wind and Seismic Loads at Base * Note(9)													
	Load Condition	Empty Condition			Operating Condition			Testing Condition					
		Max. Shear @ Base (Kg)	Max. Moment @ Base (Kg.m)	Weight (Kg)	Max. Shear @ Base (Kg)	Max. Moment @ Base (Kg.m)	Weight (Kg)	Max. Shear @ Base (Kg)	Max. Moment @ Base (Kg.m)	Weight (Kg)			
	WIND												
	SEISMIC												



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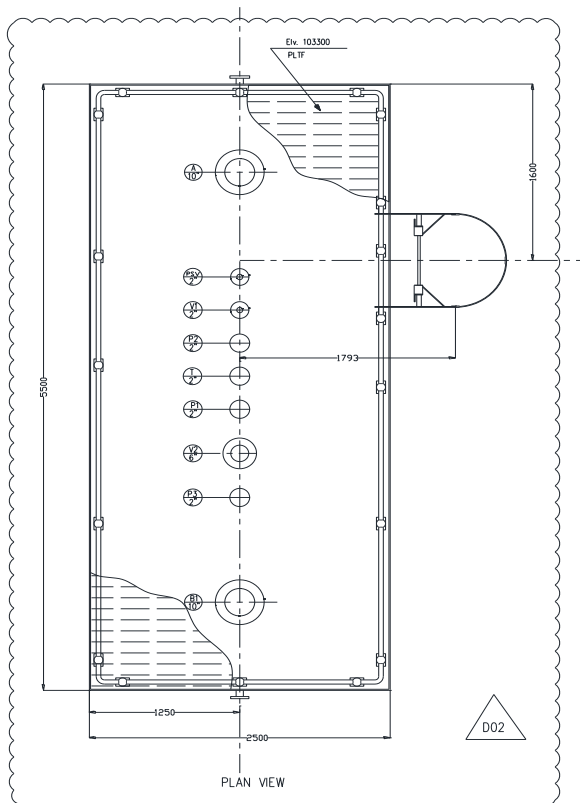
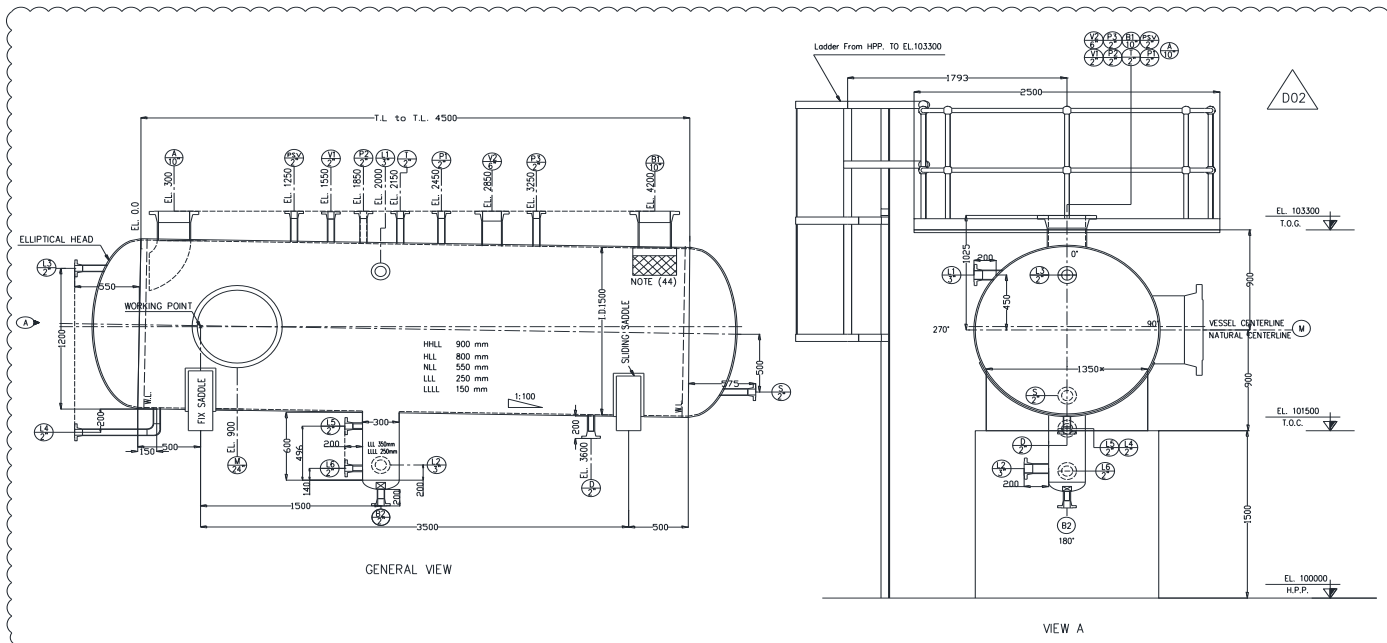
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Mech. Data Sheet For Inlet Gas K.O. Drum (V-2105) / sheet 3 of 4

Sketch





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Mech. Data Sheet For Inlet Gas K.O. Drum (V-2105) / sheet 4 of 4

Rev.	WEIGHT						Rev.	
1	WEIGHT CONTROL DATA SHEET SI UNIT *					1/1		
2								
3								
4								
5								
6	Service : <i>Inlet Gas K.O. Drum</i>					Location : <i>Bushehr (Binak Oilfield)</i>		
7	Type :					Quotation No. :		
8	No. trains :					Serial No. :		
9	No. stages :							
10	Supplier :							
11	Manufacturer :							
12	Model :							
13	Note: Information to be completed by equipment vendor.							
14								
15								
16	Total weight (kg)(1,2)							
17	Fabrication	Erection	Operation	Hydrostatic Test	Removable internal	Ladder & Platform		
18								
19								
20								
21								
22								
23	WEIGHT AND C OF G DATA REQUIRED *							
24	CONDITION	WEIGHT ACCURACY %	WEIGHT (kg)	CENTER OF GRAVITY (mm)				
25				X	Y	Z		
26	Dry							
27								
28								
29								
30	SKETCH							
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52	NOTES							
53	1) All lifting points to be load tested and certified.							
54	2) Any spreader beam to be load tested and certified.							
55	3) Lifting / rigging plan for skid mounted equipment to be provided by the Vendor.							
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