

 NISOC	نگهداشت و افزایش تولید میدان نفتی بینک سطح الارض احداث ردیف تراکم گاز در ایستگاه جمع آوری بینک						 شرکت توسعه و پترو ایران  HIRGAN ENERGY		
	MECHANICAL DATA SHEETS FOR FLARE K.O. DRUM								
شماره پیمان:	پروژه	بسته کاری	صادر کننده	تهیهات	رشته	نوع مدرک	سریال	نسخه	شماره صفحه: ۱ از ۸
۰۵۳ - ۰۷۳ - ۹۱۸۴	BK	GCS	PEDCO	120	ME	DT	0012	D01	

طرح نگهداشت و افزایش تولید ۲۷ مخزن

MECHANICAL DATA SHEETS FOR FLARE K.O. DRUM

نگهداشت و افزایش تولید میدان نفتی بینک

D01	SEP.2022	IFA	H.Adineh	M.Fakharian	M.Mehrshad	
D00	JAN.2022	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-708843

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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نگهداشت و افزایش تولید میدان نفتی بینک
سطح الارض

احداث ردیف تراکم گاز در ایستگاه جمع آوری بینک

MECHANICAL DATA SHEETS FOR FLARE K.O. DRUM



شماره صفحه: ۸ از ۲

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REVISION RECORD SHEET

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Rev	Description
D01	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. The vessel shall be supplied in accordance with project 'Specification for Pressure Vessels', Doc. No. BK-GNRL-PEDCO-000-ME-SP-0001. The manufacturer shall calculate thickness and loads of the vessel.
	2. 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.
	3. VENDOR shall include for the services of an independent verification body for mechanical design, stage inspection, testing and stamping of the equipment (if possible).
D01	4. Access Ladder & Platform to be considered .
D01	5. Painting and coating (internal & external) shall be as per project 'Specification for Painting', Doc. No. BK-GNRL-PEDCO-000-PI-SP-0006 and Specification for Lining, Doc. No. BK-GNRL-PEDCO-000-PI-SP-0007.
D01	6. Flanges shall comply with ANSI B16.5. Nozzle bolt holes shall straddle the natural centerlines for horizontal nozzles. VENDOR to confirm maximum allowable nozzle loads and moments. (RF: Raised Face, WN: Welding Neck, LWN: Long Weld Neck)
	7. 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).
	8. 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.
	9. Loads at support base, Shall be calculated and determined by vendor.
D01	10. Location and number of lifting lugs on vessels shall be specified on VENDOR drawing.
	11. All external bolts and nuts shall be hot dip galvanized. Internal bolts and nuts shall be stainless steel.
	12. All material, corrosion allowance and their suitability for the process fluid at design pressure and temperature to be confirmed by vendor.
D01	13. Deleted
D01	14. All nozzle locations and orientations will be finalized later.
	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.
D01	17. All dimensions shown are in mm unless otherwise indicated. All nozzle sizes are in inch.
	18. All removable internals should be passed through manhole.
	19. All materials shall be new and unused.
	20. 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.
	21. Fabrication tolerances for vessel shall be in accordance with requirement of ASME code.
	22. All items shall be clearly match marked against vessel drawings to facilitate erection.
	23. The elevation of equipment's nozzels should be specified as follows : I. For vertical vessels : from bottom T.L. II. For horizontal vessels : from Left T.L.
	24. Vendor shall supply details of all welding connections and give general specification of used materials.
	25. Specified accessories and attachments shall be supplied by vendor.
	26. Gasket shall be spiral wound type, graphite filled with inner ring S.S.316 and outer ring S.S. 316L



Rev	
D01	27. Fire proofing requirement will be specified as per result of fire proofing zone layout. "Area Classification: Zone 2, IIB, T3"
D01	28. Deleted.
D01	29. 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".
	30. For standard detail of Earth lug execution refer to the Project "Standard Detail Drawing For Pressure Vessels and Heat Exchangers Doc. No. BK-GNRAL-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-GNRAL-PEDCO-000-ME-DW-0001". Projection of Horizontal & Vertical nozzles is from tangent line and centerline respectively.
D01	33. Deleted
	34. 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".
D01	35. Minimum requirement for pre-commissioning, commissioning, start up and two years operation spare parts shall be in accordance with document E&C-QC-SP-1.
D01	36. Two M12 earthing lugs shall be provided on vessel support. Material of earthing lugs shall be S.S. 316.
	37. The material shall be in compliance with NACE MR0175/ISO15156 and Specification for Material Requirements in Sour Service, Doc.No. BK-GNRAL-PEDCO-000-PI-SP-0008.
	38. 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. $Ceq. = C+Mn/6+(Cr+Mo+V)/5+(Cu+Ni)/15 < 0.42 \%$
	39. All carbon steel material shall be fully killed, fine grain treated and supplied in the normalized condition.
	40. All nozzles must be vertical or horizontal and not perpendicular or parallel to vessel center line.
D01	41. 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.
D01	42. Design pressure specified is at top of vessels. VENDOR design shall include static head for vessels flooded with specific gravity of the handled liquid.
D01	43. VENDOR is to maximize shop fabrication based on the following transportation limits: <ul style="list-style-type: none"> - 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.
D01	44. All external attachments directly welded to the pressure part shall be the same material as vessel grade.



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MECHANICAL DATA SHEETS FOR FLARE K.O. DRUM

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Mechanical Data Sheets For FLARE K.O. DRUM (V-2201) / sheet 1 of 4

Rev	DATA SHEET					Rev
	1	Description : <i>Flare K.O. Drum</i>				
	2	Tag No. : <i>V-2201</i>	Quantity : <i>1 Set</i>			
	3	Type : <i>Pressure Vessel</i>				
D01	4	Process Design Data				
	5	Contents	<i>HC, H2O, CO2, H2S</i>	Corrosive / Erosive		
	6	Operating Temp. (°C)	<i>32</i>	Liquid Flow (kg/h)		
	7	Operating Press. (barg)	<i>0.5</i>	Vap. Molec. Weight (kg/kmol)		
	8	Gas Flow (kg/h)		Liquid Sp. Gravity	<i>0.67~1</i>	
	9	Liquid Viscosity (cP)		Service:	<i>Sour Service</i>	
	10	Mechanical Design Data				
	11	Design Temp. (°C)	<i>85</i>	Vessel Orientation	<i>Horizontal</i>	
	12	Design Press. (barg)	<i>7.5</i>	HHLL (mm)	<i>650</i>	
	13	Test Press. (barg)	<i>Per Code & Specification</i>	Nor. Liquid Vol. (m³)	<i>-</i>	
D01	14	Internal Vacuum (barg)	<i>F.V.</i>	In. Dia. Of Boots (mm)	<i>N/A</i>	
	15	In. Dia. of Shell (mm)	<i>1000</i>	Boot Length (mm)	<i>N/A</i>	
	16	Tan/Tan Dim. (mm)	<i>3000</i>	Boot Head Type	<i>N/A</i>	
	17	Vessel Head Type	<i>2:1 elliptical</i>	Corr. Allowance (mm)	<i>3.2</i>	
D01	18	Shell Wall Thk. (mm)	<i>*</i>	Joint Efficiency	<i>0.85 Shell / 1 Head</i>	
D01	19	Head Wall Thk. (mm)	<i>*(After Forming)</i>	Ambient Temp. (°C)		
	20	Seismic Design	<i>Site Clas: D, Code: ASCE 7-10</i>	MDMT (°C)	<i>-29</i>	
	21	Wind Design	<i>Speed: 120 Km/hr (Max.), Code: ASCE 7-10</i>	Insulation Required	<i>No</i>	
	22	Materials				
D01	23	Code	<i>ASME II / ASTM</i>	Nozzle Necks: D01		
D01	24	Shell	<i>A 516 Gr. 70 N</i>	Pipes	<i>A 106 Gr.B</i>	
D01	25	Heads	<i>A 516 Gr. 70 N</i>	Plates	<i>A 516 Gr.70 N</i>	
	26	Lining / Cladding	<i>P2</i>	Forgings	<i>A 105 N</i>	
D01	27	Skirt (Top / Bottom)	<i>A 516 Gr. 70 / A 283 Gr. C</i>	Flanges	<i>A 105 N</i>	
	28	Platform Gratings	<i>Hot Dip Galvanized C.S.</i>	Fittings	<i>A 234 Gr. WPB</i>	
	29	Gaskets	<i>Note 26</i>	External Bolts	<i>A 193 Gr. B7 (Note 11)</i>	
D01	30	Lifting Lugs	<i>A 516 Gr.70 / A 283 Gr. C</i>	External Nuts	<i>A 194 Gr. 2H (Note 11)</i>	
D01	31	Reinforcing Pads	<i>A 516 Gr.70 N</i>	Internal Bolts / Nuts		
	32	Ladder & Platform	<i>C.S.</i>	Name Plate	<i>S.S. 316</i>	
	33					
	34	REFERENCE STANDARDS & DOCUMENTS				
	35	Mechanical Design Code	<i>ASME Sec VIII Div 1, IPS-G-ME-150</i>			
	36	Specification for Pressure Vessels	<i>BK-GNRL-PEDCO-000-ME-SP-0001</i>			
	37	Process Basis of Design	<i>BK-GNRL-PEDCO-000-PR-DB-0001</i>			
	38	Piping & Instrument Diagram (P&ID)	<i>BK-GCS-PEDCO-120-PR-PI-0020</i>			
	39	Specification for Painting	<i>BK-GNRL-PEDCO-000-PI-SP-0006</i>			
	40	Specification for Insulation	<i>BK-GNRL-PEDCO-000-PI-SP-0019</i>			
	41	Specification for material requirements in Sour service	<i>BK-GNRL-PEDCO-000-PI-SP-0008</i>			
	42					
	43	Fabrication and Inspection Requirements				
	44	Inspection Authority	<i>TPI & Client</i>			
	45	Material Certification	<i>In Accordance with BS EN 10204:2004, Type 3.1, Minimum for Pressure Containing and Attachments</i>			
	46	Hydro Test Medium	<i>Water</i>	Hydro Test Procedure	<i>Yes;Per Code & Spec. Requirements</i>	
	47	Post Weld Heat Treatment	<i>Yes; Per Code & Spec. Requir.</i>	PT	<i>100%</i>	
	48	MT	<i>100 % on Lifting Lug Fillet Welds</i>	UT	<i>Yes;Per Code & Spec. Requirements</i>	
	49		<i>100 % On T-Joints and Head Joints Butt-Welds,</i>			
	50	RT	<i>Spot On Shell Longitudinal and Circumferential Joints Butt-Welds,</i>			
D01	51		<i>100 % On Nozzle Neck to Flange & Fabricated Nozzle Neck Longitudinal Butt-Welds,</i>			
	52	RT Report	<i>Yes; Per Code & Spec. Requir.</i>	PT Report	<i>Yes;Per Code & Spec. Requirements</i>	
	53	MT Report	<i>Yes; Per Code & Spec. Requir.</i>	UT Report	<i>Yes;Per Code & Spec. Requirements</i>	
	54	Fabrication Quality Control Plan (With Offer)	<i>Yes</i>			
	55	Welding Procedure Review / Approval	<i>Yes</i>			
	56	Surface Preparation & Coating	<i>Specification for Painting Doc. No. "BK-GNRL-PEDCO-000-PI-SP-0006"</i> <i>Specification for Lining Doc. No: "BK-GNRL-PEDCO-000-PI-SP-0007"</i>			
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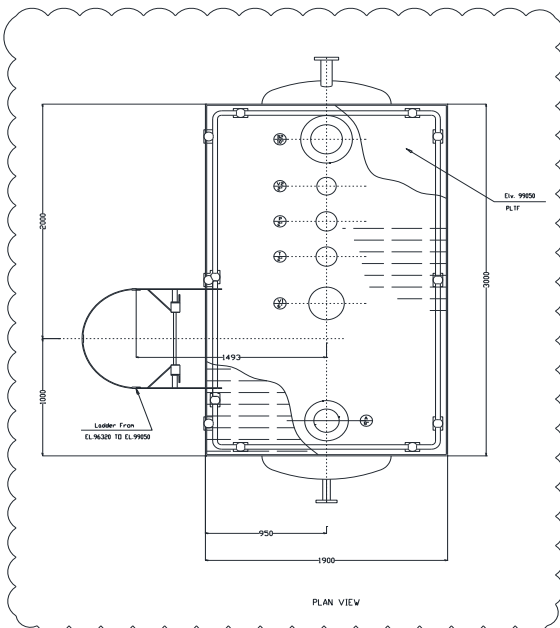
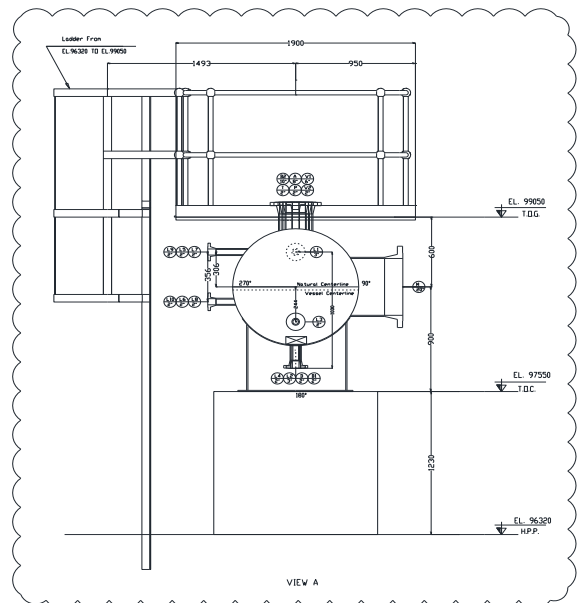
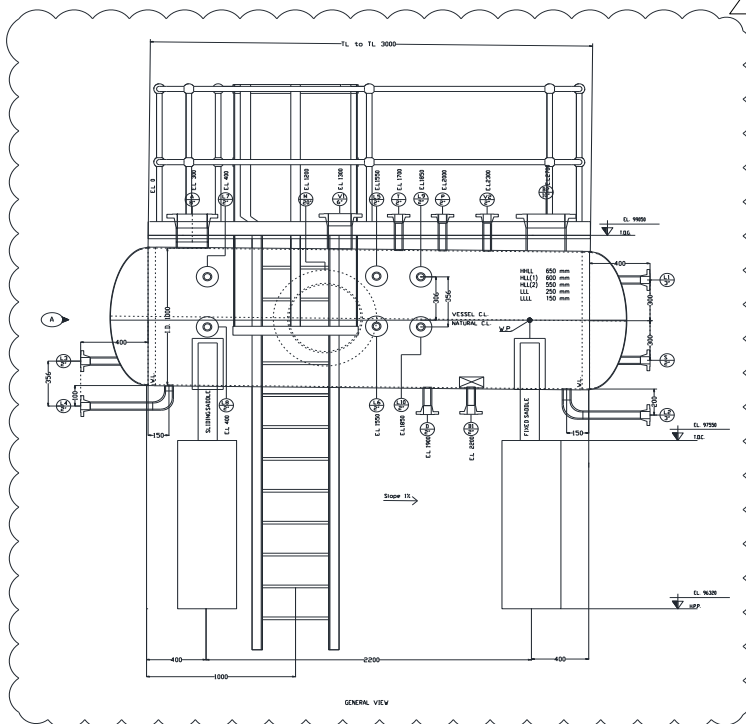
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Mechanical Data Sheets For FLARE K.O. DRUM (V-2201) / sheet 3 of 4

Sketch

D01



All dimensions are in mm.



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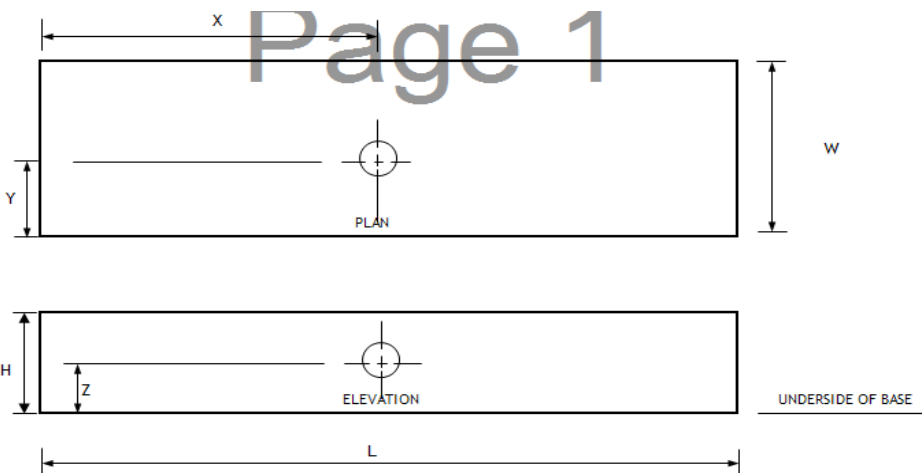
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Mechanical Data Sheets For FLARE K.O. DRUM (V-2201) / sheet 4 of 4

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1	WEIGHT CONTROL DATA SHEET SI UNIT *						1/1	D01
2								
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6	Service :	Flare K.O. Drum				Location :	Bushehr (Binak Oilfield)	
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) *							
17	Fabrication	Erection	Operation	Hydrostatic Test	Removable internal	Ladder & Platform		
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23	WEIGHT AND C OF G DATA REQUIRED *							
24	CONDITION	WEIGHT ACCURACY %	WEIGHT (kg)	CENTER OF GRAVITY (mm)				
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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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