

 <b>NISOC</b>	<b>نگهداشت و افزایش تولید میدان نفتی بینک</b> <b>سطح الارض</b>							 	
	<b>احداث ردیف تراکم گاز در ایستگاه جمع آوری بینک</b>								
	<b>MECHANICAL DATA SHEETS FOR 2nd STAGE G.C. SUCTION DRUMS</b>								
شماره پیمان: ۰۵۳ - ۰۷۳ - ۹۱۸۴	پروژه BK	بسته کاری GCS	صادرکننده PEDCO	تسهیلات 120	رشته ME	نوع مدرک DT	سریال 0004	نسخه D05	شماره صفحه: ۱ از ۸

طرح نگهداشت و افزایش تولید ۲۷ مخزن

MECHANICAL DATA SHEETS FOR 2nd STAGE G.C. SUCTION DRUMS

نگهداشت و افزایش تولید میدان نفتی بینک

D05	SEP.2024	IFA	V.Amjadi	M.Fakharian	M. Sadeghian	
D04	JUN.2023	IFA	H.Adineh	M.Fakharian	A.M.Mohseni	
D03	SEP.2022	IFA	H.Adineh	M.Fakharian	M.Mehrshad	
D02	MAY. 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: 1	CLIENT Doc. Number: F0Z-708835
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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



 <b>NISOC</b>	<b>نگهداشت و افزایش تولید میدان نفتی بینک</b> <b>سطح الارض</b>								
	<b>احداث ردیف تراکم گاز در ایستگاه جمع آوری بینک</b>								
	<b>MECHANICAL DATA SHEETS FOR 2nd STAGE G.C. SUCTION DRUMS</b>								
شماره پیمان: ۰۵۳ - ۰۷۳ - ۹۱۸۴	پروژه BK	بسته کاری GCS	صادرکننده PEDCO	تسهیلات 120	رشته ME	نوع مدرک DT	سریال 0004	نسخه D05	شماره صفحه: ۸ از ۲

### REVISION RECORD SHEET

Page	D00	D01	D02	D03	D04	Page	D05	D06	D07	D08	D09
1	X	X	X	X	X	1	X				
2	X	X	X	X	X	2	X				
3	X	X				3					
4	X	X			X	4					
5	X	X	X	X	X	5	X				
6	X	X	X		X	6					
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 <b>NISOC</b>	نگهداشت و افزایش تولید میدان نفتی بینک سطح الارض							 شرکت توسعه و پترو ایران	
	احداث ردیف تراکم گاز در ایستگاه جمع آوری بینک MECHANICAL DATA SHEETS FOR 2nd STAGE G.C. SUCTION DRUMS								
شماره پیمان: ۰۵۳ - ۰۷۳ - ۹۱۸۴	پروژه	بسته کاری	صادرکننده	تسهیلات	رشته	نوع مدرک	سریال	نسخه	شماره صفحه: ۸ از ۳
	BK	GCS	PEDCO	120	ME	DT	0004	D05	

General Notes	
Rev	
	<ol style="list-style-type: none"> <li>The Asterisk * denotes information and/or confirmation required from VENDOR.</li> <li>Deleted</li> <li>VENDOR shall include for the services of a independent verification body for mechanical design, stage inspection, testing and stamping of the equipment (if possible).</li> <li>Painting and coating (external) shall be as per project 'Specification for Painting', Doc. No. BK-GNRAL-PEDCO-000-PI-SP-0006. Specification for Lining', Doc. No. BK-GNRAL-PEDCO-000-PI-SP-0007.</li> <li>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)</li> <li>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".</li> <li>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.</li> <li>All external bolts and nuts shall be hot dip galvanized. Internal bolts and nuts shall be stainless steel.</li> <li>Loads at support base, Shall be calculated and determined by vendor.</li> <li>Access Ladder &amp; Platform to be considered .</li> <li>Deleted</li> <li>All material, corrosion allowance and their suitability for the process fluid at design pressure and temperature to be confirmed by vendor.</li> <li>Deleted</li> <li>All nozzle locations and orientations to be finalized later.</li> <li>Instrumentation items are excluded from vendor's scope of supply.</li> <li>Any changes in material of construction, location &amp; orientation of the nozzles shall be confirmed by client.</li> <li>All materials shall be new and unused.</li> <li>Fabrication tolerances for vessel shall be in accordance with requirement of ASME code.</li> <li>Location and number of lifting lugs on vessels shall be specified on VENDOR drawing.</li> <li>All items shall be clearly match marked against vessel drawings to facilitate erection.</li> <li>For instrument's connections please refer to project "Specification For Instrumentation", Doc. No. BK-GNRAL-PEDCO-000-IN-SP-0001 Doc. No. BK-GNRAL-PEDCO-000-IN-SP-0001 and Instrument Hook-up Diagram ,Doc.No.BK-PPL-PEDCO-320-IN-DG-0002</li> <li>Vendor shall supply details of all welding connections and give general specification of used materials.</li> <li>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).</li> <li>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".</li> <li>Specified accessories and attachments shall be supplied by vendor.</li> <li>Gasket shall be spiral wound type, graphite filled with inner ring and outer ring S.S.316</li> <li>Fire proofing requirement will be specified as per result of fire proofing zone layout. "Area Classification: Zone 2, IIB, T3"</li> <li>Insulation shall be as per project 'Specification for Insulation', Document No. BK-GNRAL-PEDCO-000-PI-SP-0019.</li> <li>Two M12 earthing lugs shall be provided on vessel support. Material of Earthing lugs shall be S.S. 316</li> </ol>

 <b>NISOC</b>	<b>نگهداشت و افزایش تولید میدان نفتی بینک</b> <b>سطح الارض</b>							 <b>شرکت توسعه پترو ایران</b>
	<b>احداث ردیف تراکم گاز در ایستگاه جمع آوری بینک</b> <b>MECHANICAL DATA SHEETS FOR 2nd STAGE G.C. SUCTION DRUMS</b>							
شماره پیمان:	پروژه	بسته کاری	صادر کننده	تسهیلات	رشته	نوع مدرک	سریال	نسخه
۰۵۳ - ۰۷۳ - ۹۱۸۴	BK	GCS	PEDCO	120	ME	DT	0004	D05

General Notes (Cont'd)	
Rev	
	<p>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".</p> <p>31. Elliptical heads shall be Ultrasonic Tested for LAMINATION after forming.</p> <p>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 &amp; Vertical nozzles is from tangent line and centerline respectively.</p> <p>33. The elevation of equipment's nozzels should be specified as follows :</p> <p>I. For vertical vessels : from bottom T.L.</p> <p>II. For horizontal vessels : from Left T.L.</p> <p>34. Nozzles and flanges shall be suitably supported and reinforced based on nozzle loads provided in project Specification for Pressure Vessels, Document No. BK-GNRAL-PEDCO-000-ME-SP-0001.</p> <p>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.</p> <p>36. Minimum requirement for pre-commissioning, commissioning, start up and two years operation and spare parts shall be in accordance with document E&amp;C-QC-SP-1.</p> <p>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.</p> <p>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.</p> <p>39. VENDOR is to maximize shop fabrication based on the following transportation limits:</p> <ul style="list-style-type: none"> <li>- Maximum weight: 96 tonnes</li> <li>- Maximum load per axle: 12 tonnes</li> <li>- Maximum length: 50.0 m</li> <li>- Maximum width: 5.0 m</li> <li>- Maximum height: 5.2 m</li> </ul> <p>For items with dimensions and weights greater than the road capacity specified above, VENDOR may be required to split the package into several components.</p> <p>40. All external attachments directly welded to the pressure part shall be the same material as vessel grade.</p> <p>41. The Vendor shall be fully responsible for the complete mechanical design, preparing calculation book and supply of the vessel.</p> <p>42. All dimensions shown are in mm unless otherwise indicated. All nozzle sizes are in inch.</p> <p>43. Deleted</p> <p>44. DEMISTER specification will be finalized later.</p> <p>45. The material shall be in compliance with NACE MR0175/ISO15156 and Specification For Material Requirements in Sour service Document No. BK-GNRAL-PEDCO-000-PI-SP-0008.</p> <p>46. Welded carbon and carbon manganese steels for vessel shall comply with the following :</p> <p>Carbon content shall not exceed 0.23%.</p> <p>Based on the ladel analysis, below equation shall be satisfied.</p> $C_{eq} = \frac{C + Mn}{6} + \frac{(Cr + Mo + V)}{5} + \frac{(Cu + Ni)}{15} < 0.42 \%$ <p>47. All carbon steel material shall be fully killed, fine grain treated and supplied in the normalized condition.</p> <p>48. VENDOR to advise (VTA) internal for inlet nozzle.</p>



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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 2nd STAGE G.C. SUCTION DRUMS



شماره پیمان:

۰۵۳ - ۰۷۳ - ۹۱۸۴

پروژه

بسته کاری

صادر کننده

تسهیلات

رشته

نوع مدرک

سریال

نسخه

شماره صفحه: ۸ از ۵

BK

GCS

PEDCO

120

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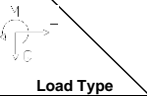
D05

Mech. Data Sheet For 2nd Stage G.C. Suction Drums (V-2102 A/B/C) / sheet 1 of 4

Rev	DATA SHEET					Rev
1	Description : 2nd Stage G.C. Suction Drums					
2	Tag No. : V-2102 A/B/C		Quantity : 3		Set	
3	Type : Pressure Vessel					
4	Process Design Data					
5	Contents		Corrosive / Erosive	CO2, H2S		
6	Operating Temp. (°C)	60	Liquid Flow (kg/h)			
7	Operating Press. (barg)	18.3	Vap. Molec. Weight (kg/kmol)			
8	Gas Flow (kg/h)		Liquid Sp. Gravity	0.01828		
9	Liquid Viscosity (cP)		Service:	Sour HC		
10	Mechanical Design Data					D05
11	Design Temp. (°C)	115.4	Vessel Orientation	Vertical		
12	Design Press. (barg)	F.V / 22	HHLL (mm)	1100		D05
13	Test Press. (barg)	Per Code & Specification	Nor. Liquid Vol. (m³)			
14	Internal Vacuum (barg)	Yes	In. Dia. Of Boots (mm)	-		
15	In. Dia. of Shell (mm)	900	Boot Length (mm)	-		
16	Tan/Tan Dim. (mm)	3000	Boot Head Type	-		
17	Vessel Head Type	2:1 Elliptical	Corr. Allowance (mm)	-		
18	Shell Wall Thk. (mm)	*	Joint Efficiency	0.85 (Shell) / 1 (Head)		
19	Head Wall Thk. (mm)	*(After Forming)	Ambient Temp. (°C)			
D05	20	Seismic Design	Site Class: D, Code: ASCE 7-10 Fa=1,FV=1.33,S1=0.46,Ss=1.125,I=1.25	MDMT (°C)	5	
D05	21	Wind Design	Speed: 232 Km/hr (Max.), Code: ASCE 7-10	Insulation Required	Yes, PP	
22	Materials					
23	Code	ASME II / ASTM	Nozzle Necks:	A 106 Gr.B + 3mm Clad SS 316L		
24	Shell / Heads	A 516 Gr. 70 N + 3mm Clad SS 316L	Pipes	A 106 Gr.B + 3mm Clad SS 316L		
25	Heads	A 516 Gr. 70 N + 3mm Clad SS 316L	Plates	A 516 Gr.70 N		
26	Lining / Cladding	- / 3mm SS 316L	Forgings	A 105 N + 3mm Clad SS 316L		
27	Leg / Pad	A 283 Gr.C / A 516 Gr. 70	Flanges	A 105 N+ 3mm Clad SS 316L		
28	Platform Gratings	Hot Dip Galvanized C.S.	Fittings	A 234 Gr. WPB + Cladding		
29	Gaskets	Note 26	External Bolts	A193 Gr B7M (Note 8)		
30	Lifting Lugs	A 516 Gr.70 N / A 283	External Nuts	A194 Gr 2HM (Note 8)		
31	Reinforcing Pads	A 516 Gr.70 N	Internal Bolts	A193 Gr B8M		
32	Ladder & Platform	C.S.	Internal Nuts	A194 8M		
33	Internal welded Support	SS 316L	Name Plate	S.S		
34						
35	REFERENCE STANDARDS & DOCUMENTS					
36	Mechanical Design Code		ASME Sec VIII Div 1, IPS-G-ME-150 (Latest Revision)			
37	Specification for Pressure Vessels		BK-GNRL-PEDCO-000-ME-SP-0001			
38	Process Basis of Design		BK-GNRL-PEDCO-000-PR-DB-0001			
39	Piping & Instrument Diagram (P&ID)		BK-GCS-PEDCO-120-PR-PI-0009			
40	Specification for Painting		BK-GNRL-PEDCO-000-PI-SP-0006			
41	Specification for Insulation		BK-GNRL-PEDCO-000-PI-SP-0019			
42	Specification For Material Requirements in Sour service		BK-GNRL-PEDCO-000-PI-SP-0008 (Note 45)			
43	Fabrication and Inspection Requirements					
44	Inspection Authority	TPI & Client				
45	Material Certification	In Accordance with BS EN 10204:2004, Type 3.1, Minimum for Pressure Containing and Attachments				
46	Hydro Test Medium	Water	Hydro Test Procedure	Yes;Per Code & Spec. Requirements		
47	Post Weld Heat Treatment	Per Code & Spec. Requirements	PT	100%		
48	MT	100 % on Lifting Lug Fillet Welds	UT	Yes;Per Code & Spec. Requirements		
49	RT	100 % On T-Joints and Head Joints Butt-Welds,				
50		Spot On Shell Longitudinal and Circumferential Joints Butt-Welds,				
51		100 % On Nozzle Neck to Flange & Fabricated Nozzle Neck Longitudinal Butt-Welds,				
52	RT Report	Yes; Per Code & Spec. Requir.	PT Report	Yes;Per Code & Spec. Requirements		
53	MT Report	Yes; Per Code & Spec. Requir.	UT Report	Yes;Per Code & Spec. Requirements		
54	Fabrication Quality Control Plan (With Offer)		Yes			
55	Welding Procedure Review / Approval		Yes			
56	Surface Preparation & Coating		Specification for Painting Doc. No.BK-GNRL-PEDCO-000-PI-SP-0006			
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 <b>NISOC</b>	نگهداشت و افزایش تولید میدان نفتی بینک سطح الارض								
	احداث ردیف تراکم گاز در ایستگاه جمع آوری بینک								
	MECHANICAL DATA SHEETS FOR 2nd STAGE G.C. SUCTION DRUMS								
شماره پیمان:	پروژه	بسته کاری	صادر کننده	تسهیلات	رشته	نوع مدرک	سریال	نسخه	شماره صفحه: ۸ از ۸
۰۵۳ - ۰۷۳ - ۹۱۸۴	BK	GCS	PEDCO	120	ME	DT	0004	D05	

Mech. Data Sheet For 2nd Stage G.C. Suction Drums (V-2102 A/B/C) / sheet 2 of 4

Rev.	ACCESSORIES , NOZZLES LIST & LOADS @ BASE													Rev.
1	Accessories & Attachments (Note 25)													
2	Supporting Saddles		No			Name Plate Bracket		Yes						
3	Access Ladder & Platform (Note 10)		Yes			Name Plate		Yes						
4	Insulation Support		Yes			Earthing Lug (Note 30)		Yes						
5	Insulation		Yes			Tailing Lug		Yes						
6	Insulation Cover		Yes			Cathodic Protection (Sacrificial Anodes)		No						
7	Fireproofing Support (Note 27)		No			Anchor Bolts		No						
8	Lifting Lugs		Yes			Instrumentations		No						
9	Internal/ External Clips		Yes			Skid		No						
10	Template		No			Support Clips		Yes						
11	Boot		No			Vortex Breaker		Yes						
12	Davit for Manhole		Yes			Rung & Grip		No						
13	Internal Lining (By Painting)		Yes			Heating Coil		No						
14	Internal Demister Pad (Note 44)		Yes											
15														
16														
17														
18	Nozzles List * (Note 1)													
19	Mark	Qty.	Description	Pipe		Flange			Proj. (mm) (Note 32)	Reinforcement		Remarks		
20				Size	Thk.	Sch.	Type	Rate.		Face	Thk.		O.D.	
21	A	1	Inlet	6"			WN	#300	RF	727*	*	310*	Note 6	
22	B1	1	Gas Outlet	6"			WN	#300	RF	500*	*	310*	Note 6	
23	B2	1	Liquid Outlet	2"			WN	#300	RF	450*				
24	V	1	Vent	2"			WN	#300	RF	See DWG				
25	M	1	Manhole	20"			WN	#300	RF	827*	*	870*	Note 6	
26	S	1	Utility Connection	2"			WN	#300	RF	659*				
27	L 1,2	2	Stand Pipe	3"			WN	#300	RF	718*	*	210*	Note 6	
28	L 3,4	2	Level Transmitter	2"			WN	#300	RF	718*				
29	PSV	1	Pressure Safety Valve	2"			WN	#300	RF	718*				
30	P1	1	Pressure Gauge	2"			WN	#300	RF	718*				
31	T	1	Temperature Gauge	2"			WN	#300	RF	718*				
32	P 2,3	2	PDIT	2"			WN	#300	RF	718*				
33														
34														
35														
36														
37														
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40														
41	Wind and Seismic Loads at Base * Note(9)													
42		Empty Condition			Operating Condition			Testing Condition						
43		Load Type	Max. Shear	Max.	Weight	Max. Shear	Max.	Weight	Max. Shear	Max.	Weight			
44			@ Base	Moment @		@ Base	Moment @		@ Base	Moment @				
45			(Kg)	Base		(Kg)	Base		(Kg)	Base				
46			(Kg.m)	(Kg)		(Kg)		(Kg)		(Kg.m)	(Kg)			
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NISOC

نگهداشت و افزایش تولید میدان نفتی بینک  
سطح الارض

احداث ردیف تراکم گاز در ایستگاه جمع آوری بینک

MECHANICAL DATA SHEETS FOR 2nd STAGE G.C. SUCTION DRUMS



شماره پیمان:

۰۵۳ - ۰۷۳ - ۹۱۸۴

پروژه

BK

بسته کاری

GCS

صادر کننده

PEDCO

تسهیلات

120

رشته

ME

نوع مدرک

DT

سریال

0004

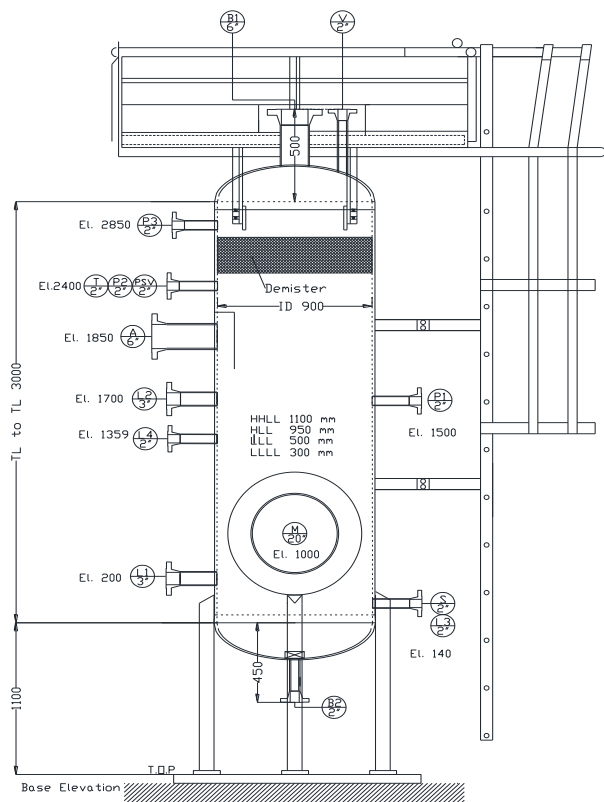
نسخه

D05

شماره صفحه: ۸ از ۷

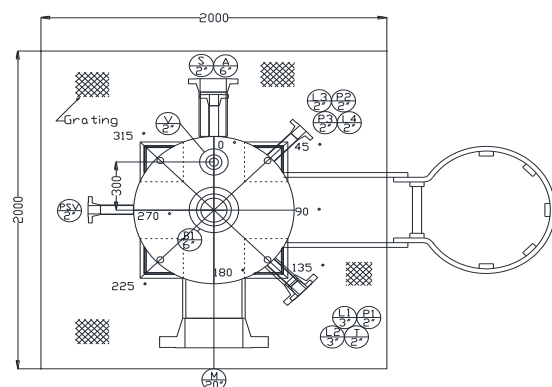
Mech. Data Sheet For 2nd Stage G.C. Suction Drums (V-2102 A/B/C) / sheet 3 of 4

Sketch



Elevation View

Elevation View will be finalized later by piping department



Orientation View

Orientation View will be finalized later by piping department

All dimensions are in mm.



NISOC

نگهداشت و افزایش تولید میدان نفتی بینک  
سطح الارض

احداث ردیف تراکم گاز در ایستگاه جمع آوری بینک

MECHANICAL DATA SHEETS FOR 2nd STAGE G.C. SUCTION DRUMS



شماره پیمان:

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پروژه

BK

بسته کاری

GCS

صادر کننده

PEDCO

تسهیلات

120

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DT

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0004

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D05

شماره صفحه: ۸ از ۸

Mech. Data Sheet For 2nd Stage G.C. Suction Drums (V-2102 A/B/C) / sheet 4 of 4

Rev.	WEIGHT						Rev.
1	<b>WEIGHT CONTROL DATA SHEET SI UNIT *</b>					<b>1/1</b>	
2							
3							
4							
5							
6	Service : <i>2nd Stage G.C. Suction Drums</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							
14	Note: Information to be completed by equipment vendor.						
15							
16	<b>Total weight (kg) *</b>						
17	Fabrication	Erection	Operation	Hydrostatic Test	Removable internal	Ladder & Platform	
18							
19							
20							
21							
22							
23	<b>WEIGHT AND C OF G DATA REQUIRED *</b>						
24	CONDITION	WEIGHT ACCURACY %	WEIGHT (kg)	CENTER OF GRAVITY (mm)			
25				X	Y	Z	
26	Dry						
27							
28							
29							
30	<b>SKETCH</b>						
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52	<b>NOTES</b>						
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.						
56							
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