



 <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: ۰۵۳ - ۰۷۳ - ۹۱۸۴	پروژه: BK	بسته کاری: GCS	صادر کننده: PEDCO	تسهیلات: 120	رشته: ME	نوع مدرک: DT	سریال: 0004	نسخه: D03	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

 						
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: 2

CLIENT Doc. Number: F0Z-708835

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



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


نسخه	سریال	نوع مدرک	رشته	تجهیزات	صادر کننده	بسته کاری	پروژه
D03	0004	DT	ME	120	PEDCO	GCS	BK

شماره صفحه: ۲ از ۸



REVISION RECORD SHEET

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1	X	X	X	X	
2	X	X	X	X	
3	X	X			
4	X	X			
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 <b>NISOC</b>	نگهداشت و افزایش تولید میدان نفتی بینک سطح الارض							 شرکت توسعه و پارسا سازی انرژی	
	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 ۳
۰۵۳ - ۰۷۳ - ۹۱۸۴	BK	GCS	PEDCO	120	ME	DT	0002	D03	

General Notes	
Rev	
	<ol style="list-style-type: none"> <li>The Asterisk * denotes information and/or confirmation required from VENDOR. TJ: Confirmed</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). TJ: Confirmed</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. TJ: Confirmed</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) TJ: Confirmed</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". TJ: Confirmed</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. TJ: Confirmed</li> <li>All external bolts and nuts shall be hot dip galvanized. Internal bolts and nuts shall be stainless steel. TJ: Confirmed</li> <li>Loads at support base, Shall be calculated and determined by vendor. TJ: Confirmed</li> <li>Access Ladder &amp; Platform to be considered . TJ: Confirmed</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. TJ: Confirmed</li> <li>Deleted</li> <li>All nozzle locations and orientations to be finalized later. TJ: Confirmed</li> <li>Instrumentation items are excluded from vendor's scope of supply. TJ: Confirmed</li> <li>Any changes in material of construction, location &amp; orientation of the nozzles shall be confirmed by client. TJ: Confirmed</li> <li>All materials shall be new and unused. TJ: Confirmed</li> <li>Fabrication tolerances for vessel shall be in accordance with requirement of ASME code. TJ: Confirmed</li> <li>Location and number of lifting lugs on vessels shall be specified on VENDOR drawing. TJ: Confirmed</li> <li>All items shall be clearly match marked against vessel drawings to facilitate erection. TJ: Confirmed</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 TJ: Confirmed</li> <li>Vendor shall supply details of all welding connections and give general specification of used materials. TJ: Confirmed</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). TJ: Confirmed</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". TJ: Confirmed</li> <li>Specified accessories and attachments shall be supplied by vendor. TJ: Confirmed</li> <li>Gasket shall be spiral wound type, graphite filled with inner ring and outer ring S.S.316 TJ: Confirmed</li> <li>Fire proofing requirement will be specified as per result of fire proofing zone layout. "Area Classification: Zone 2, IIB, T3" TJ: Confirmed</li> <li>Insulation shall be as per project 'Specification for Insulation', Document No. BK-GNRAL-PEDCO-000-PI-SP-0019. TJ: Confirmed</li> <li>Two M12 earthing lugs shall be provided on vessel support. Material of Earthing lugs shall be S.S. 316 TJ: Confirmed</li> </ol>

 <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:	پروژه	بسته کاری	صادر کننده	تسهیلات	رشته	نوع مدرک	سریال	نسخه	شماره صفحه: ۴ از ۸
۰۵۳ - ۰۷۳ - ۹۱۸۴	BK	GCS	PEDCO	120	ME	DT	0004	D03	

Rev	General Notes (Cont'd)
	<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-GNRL-PEDCO-000-ME-DW-0001". <b>TJ: Confirmed</b></p> <p>31. Elliptical heads shall be Ultrasonic Tested for LAMINATION after forming. <b>TJ: RT test will be performed.</b></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-GNRL-PEDCO-000-ME-DW-0001". Projection of Horizontal &amp; Vertical nozzles is from tengent line and centerline respectively. <b>TJ: Confirmed</b></p> <p>33. The elevation of equipment's nozzels should be specified as follows :          I. For vertical vessels : from bottom T.L. <b>TJ: Confirmed</b>          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-GNRL-PEDCO-000-ME-SP-0001. <b>TJ: Confirmed</b></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. <b>TJ: Confirmed</b></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. <b>TJ: Confirmed</b></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. <b>TJ: Confirmed</b></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. <b>TJ: Confirmed</b></p> <p>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. <b>TJ: Confirmed</b></p> <p>40. All external attachments directly welded to the pressure part shall be the same material as vessel grade. <b>TJ: Confirmed</b></p> <p>41. The Vendor shall be fully responsible for the complete mechanical design, preparing calculation book and supply of the vessel. <b>TJ: Confirmed</b></p> <p>42. All dimensions shown are in mm unless otherwise indicated. All nozzle sizes are in inch. <b>TJ: Confirmed</b></p> <p>43. Deleted</p> <p>44. DEMISTER specification will be finilized later. <b>TJ: Confirmed</b></p> <p>45. 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. <b>TJ: Confirmed</b></p> <p>46. Welded carbon and carbon manganess steels for vessel shall comply with the following :          Carbon content shall not exceed 0.23%. <b>TJ: Confirmed</b>          Based on the ladel analysis, below equation shall be satisfied.  <math>Ceq. = C+Mn/6+(Cr+Mo+V)/5+(Cu+Ni)/15 &lt; 0.42 \%</math></p> <p>47. All carbon steel material shall be fully killed, fine grain treated and supplied in the normalized condition. <b>TJ: Confirmed</b></p>



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

بسته کاری

صادر کننده

تسهیلات

رشته

نوع مدرک

سریال

نسخه

شماره صفحه: ۵ از ۸

BK

GCS

PEDCO

120

ME

DT

0004

D03

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

Rev	DATA SHEET					Rev	
D03	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					
	11	Design Temp. (°C)	115.4	Vessel Orientation	Vertical		
	12	Design Press. (barg)	F.V / 22	HHLL (mm)	950		
	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)	*TJ: 8mm	Joint Efficiency	0.85 (Shell) / 1 (Head)		
	19	Head Wall Thk. (mm)	*(After Forming) TJ: 4mm	Ambient Temp. (°C)			
	20	Seismic Design	Site Class: D, Code: ASCE 7-10	MDMT (°C)	5		
	21	Wind Design	Speed: 120 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	REFERENCE STANDARDS & DOCUMENTS						
35							
36	Mechanical Design Code	ASME Sec VIII Div 1, IPS-G-ME-150 (Latest Revision)					
37	Specification for Pressure Vessels	BK-GNRAL-PEDCO-000-ME-SP-0001					
38	Process Basis of Design	BK-GNRAL-PEDCO-000-PR-DB-0001					
39	Piping & Instrument Diagram (P&ID)	BK-GCS-PEDCO-120-PR-PI-0009					
40	Specification for Painting	BK-GNRAL-PEDCO-000-PI-SP-0006					
41	Specification for Insulation	BK-GNRAL-PEDCO-000-PI-SP-0019					
42	Specification For Material Requirements in Sour service	BK-GNRAL-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-GNRAL-PEDCO-000-PI-SP-0006					
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## احداث ردیف تراکم گاز در ایستگاه جمع آوری بینک

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



شماره پیمان:

• 03 - • 73 - 9184

پروژه	بسته کاری	صادرکننده	تسهیلات	رشته	نوع مدرک	سریال	سخه
BK	GCS	PEDCO	120	ME	DT	0004	D03

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

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ACCESSORIES , NOZZLES LIST & LOADS @ BASE

Rev.

Accessories & Attachments (Note 25)

Supporting Saddles

No

Name Plate Bracket

Yes

Access Ladder & Platform (Note 10)

Yes

Name Plate

Yes

Insulation Support

Yes

Earthing Lug (Note 30)

Yes

Insulation

Yes

Tailing Lug

Yes

Insulation Cover

Yes

Cathodic Protection (Sacrificial Anodes)

No

Fireproofing Support (Note 27)

No

Anchor Bolts

No

Lifting Lugs

Yes

Instrumentations

No

Internal/ External Clips

Yes

Skid

No

Template

No

Support Clips

Yes

Boot

No

Vortex Breaker

Yes

Davit for Manhole

Yes

Rung & Grip

No

Internal Lining (By Painting)

Yes

Heating Coil

No

Internal Demister Pad (Note 44)

Yes

Nozzles List \* (Note 1)

Mark

Qty.

Description

Pipe

Size

Thk.

Sch.

Flange

Type

Rate.

Face

Proj. (mm)

(Note 32)

Reinforcement

Thk.

O.D.

Remarks

A

1

Inlet

6"

WN

#300

RF

727\*

\*

310\*

Note 6

B1

1

Gas Outlet

6"

WN

#300

RF

493\*

\*

310\*

Note 6

B2

1

Liquid Outlet

2"

WN

#300

RF

493\*

V

1

Vent

2"

WN

#300

RF

See DWG

M

1

Manhole

20"

WN

#300

RF

827\*

\*

870\*

Note 6

S

1

Utility Connection

2"

WN

#300

RF

659\*

L 1,2

2

Stand Pipe

3"

WN

#300

RF

718\*

\*

210\*

Note 6

L 3,4

2

Level Transmitter

2"

WN

#300

RF

718\*

PSV

1

Pressure Safety Valve

2"

WN

#300

RF

718\*

P1

1

Pressure Gauge

2"

WN

#300

RF

718\*

T

1

Temperature Gauge

2"

WN

#300

RF

718\*

P 2,3

2

PDIT

2"

WN

#300

RF

718\*

Wind and Seismic Loads at Base \* Note(9)

Load Condition

M

T

R

Q

Load Type

Empty Condition

Max. Shear @ Base (Kg)

Max. Moment @ Base (Kg.m)

Weight (Kg)

Operating Condition

Max. Shear @ Base (Kg)

Max. Moment @ Base (Kg.m)

Weight (Kg)

Testing Condition

Max. Shear @ Base (Kg)

Max. Moment @ Base (Kg.m)

Weight (Kg)

WIND

SEISMIC



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

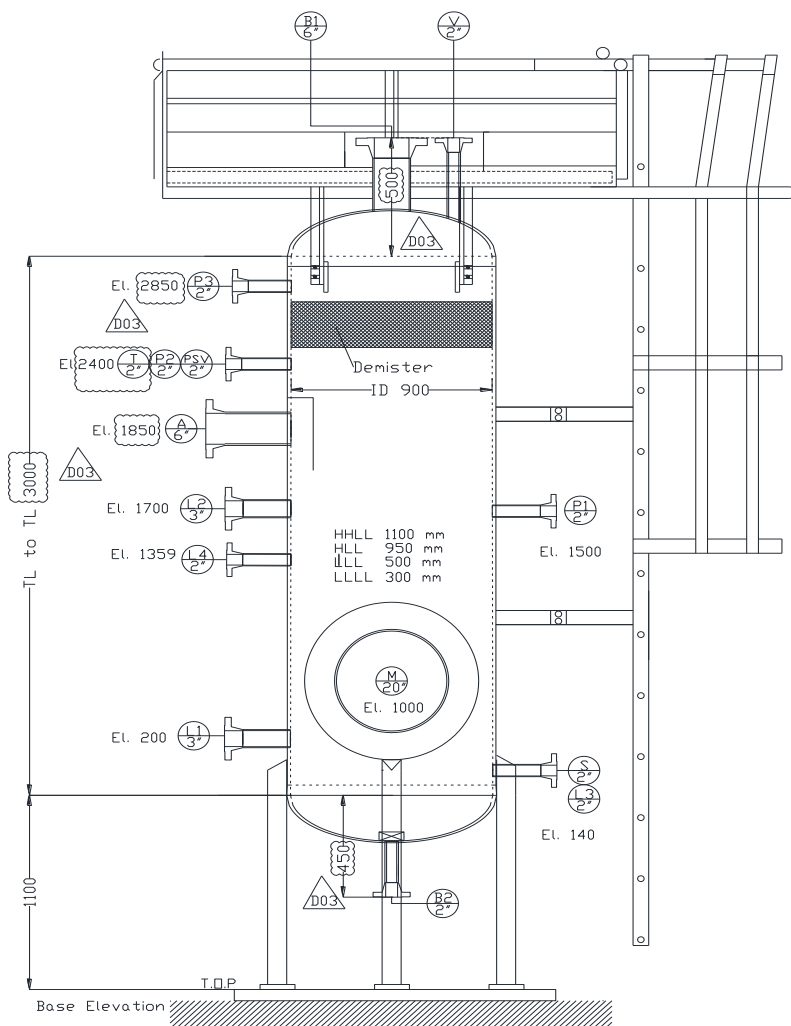
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شماره صفحه: ۸ از ۷

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

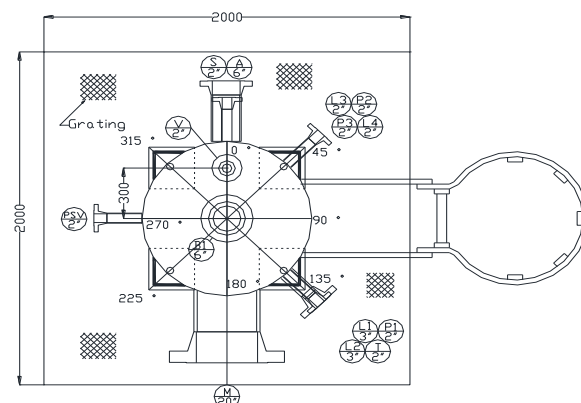
Sketch

D03



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:

۰۵۳ - ۰۷۳ - ۹۱۸۴

پروژه

BK

بسته کاری

GCS

صادر کننده

PEDCO

تسهیلات

120

رشته

ME

نوع مدرک

DT

سریال

0004

نسخه

D03

شماره صفحه: ۸ از ۸

Mech. Data Sheet For 2nd Stage G.C. Suction Drums (V-2102 A/B/C) / sheet 3 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>						
31							
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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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