



NISOC

نگهداشت و افزایش تولید میدان نفتی بینک
سطح الارض

احداث ردیف تراکم گاز در ایستگاه جمع آوری بینک



DATA SHEET FOR ORIFICE PLATE / RESTRICTION ORIFICE

شماره پیمان:

۰۵۳ - ۰۷۳ - ۹۱۸۴

پروژه

BK

بسته کاری

GCS

صادرکننده

PEDCO

تسهیلات

120

رشته

IN

نوع مدرک

DT

سریال

0013

نسخه

D02

شماره صفحه: ۱ از ۸

طرح نگهداشت و افزایش تولید ۲۷ مخزن

DATA SHEET FOR ORIFICE PLATE / RESTRICTION ORIFICE

نگهداشت و افزایش تولید میدان نفتی بینک

Rev.	Date	Purpose of Issue / Status	Prepared by:	Checked by:	Approved by:	CLIENT Approval
D02	MAR.2024	IFA	P.Hajisadeghi	M.Fakharian	S.Faramarzpour	
D01	JUN.2023	IFA	P.Hajisadeghi	M.Fakharian	A.M.Mohseni	
D00	JUL.2022	IFC	P.Hajisadeghi	M.Fakharian	M.Mehrshad	

Class: 1

CLIENT Doc. Number: F9Z-708934

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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سطح الارض

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DATA SHEET FOR ORIFICE PLATE / RESTRICTION ORIFICE

شماره پیمان:

۰۵۳ - ۰۷۳ - ۹۱۸۴

نسخه	سریال	نوع مدرک	رشته	تهیلات	صادر کننده	بسته کاری	پروژه
D02	0013	DT	IN	120	PEDCO	GCS	BK

شماره صفحه: ۸ از ۲

REVISION RECORD SHEET

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DATA SHEET FOR ORIFICE PLATE / RESTRICTION ORIFICE

شماره پیمان:

۰۵۳ - ۰۷۳ - ۹۱۸۴

پروژه	بسته کاری	صادر کننده	تسهیلات	رشته	نوع مدرک	سریال	نسخه
BK	GCS	PEDCO	120	IN	DT	0013	D02

شماره صفحه: ۳ از ۸

REFERENCE DOCUMENTS :

Specification For Instrumentation	BK-GNRAL-PEDCO-000-IN-SP-0001
Process Basis Of Design	BK-GNRAL-PEDCO-000-PR-DB-0001
Piping Material Specification	BK-GCS-PEDCO-120-PI-SP-0001
Instrument & Control System Design Criteria	BK-GCS-PEDCO-120-IN-DC-0002
Symbol & Legend For PFD and P&ID	BK-GCS-PEDCO-120-PR-PI-0001
P&ID - Gas Compression Inlet Gas Pipeline (Binak)	BK-GCS-PEDCO-120-PR-PI-0002
P&ID - Gas Compression Inlet Gas Pipeline (Golkhari)	BK-GCS-PEDCO-120-PR-PI-0003
P&ID - Slug Catcher System	BK-GCS-PEDCO-120-PR-PI-0004
P&ID - Gas Compression Inlet Knock Out Drum	BK-GCS-PEDCO-120-PR-PI-0005
P&ID - 1st Stage Gas Compression Suction Drums	BK-GCS-PEDCO-120-PR-PI-0006
P&ID - 1st Stage Gas Compression Compressors	BK-GCS-PEDCO-120-PR-PI-0007
P&ID - 1st Stage Gas Compression Air Coolers	BK-GCS-PEDCO-120-PR-PI-0008
P&ID - 2nd Stage Gas Compression Suction Drums	BK-GCS-PEDCO-120-PR-PI-0009
P&ID - 2nd Stage Gas Compression Compressors	BK-GCS-PEDCO-120-PR-PI-0010
P&ID - 2nd Stage Gas Compression Air Coolers	BK-GCS-PEDCO-120-PR-PI-0011
P&ID - 2nd Stage Gas Compression Discharge Drum	BK-GCS-PEDCO-120-PR-PI-0012
P&ID - Gas Compression Dehydration Package	BK-GCS-PEDCO-120-PR-PI-0013
P&ID - Lean Glycol Storage Tank	BK-GCS-PEDCO-120-PR-PI-0014
P&ID - Instrument & Plant Air System	BK-GCS-PEDCO-120-PR-PI-0015
P&ID - Nitrogen Generation System	BK-GCS-PEDCO-120-PR-PI-0016
P&ID - Close Drain System	BK-GCS-PEDCO-120-PR-PI-0017
P&ID - Corrosion Inhibitor Package	BK-GCS-PEDCO-120-PR-PI-0018
P&ID - Methanol Injection Package	BK-GCS-PEDCO-120-PR-PI-0019
P&ID - LP Flare System	BK-GCS-PEDCO-120-PR-PI-0020
P&ID - Oily Water Sewer	BK-GCS-PEDCO-120-PR-PI-0021
P&ID - Fuel Gas System	BK-GCS-PEDCO-120-PR-PI-0022
P&ID - Diesel Oil System	BK-GCS-PEDCO-120-PR-PI-0023
P&ID - Potable Water System	BK-GCS-PEDCO-120-PR-PI-0024
P&ID - Glycol Sump Drum	BK-GCS-PEDCO-120-PR-PI-0025
P&ID - Fire Water Network	BK-GCS-PEDCO-120-SA-PI-0001
P&ID - Total Flooding System For Extension of Existing Elect. Building	BK-GCS-PEDCO-120-SA-PI-0002



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DATA SHEET FOR ORIFICE PLATE / RESTRICTION ORIFICE

شماره پیمان:

۰۵۳ - ۰۷۳ - ۹۱۸۴

پروژه	بسته کاری	صادرکننده	تجهیزات	رشته	نوع مدرک	سریال	نسخه
BK	GCS	PEDCO	120	IN	DT	0013	D02

شماره صفحه: ۴ از ۸

GENERAL NOTES:

- Orifice plate and restriction orifice plates shall be stamped with manufacturer's name, tag no., bore size, line size/rating, plate material, plate thickness and the word 'upstream' on the upstream side of the paddle.
- Bore sizing shall be done as per the full scale flow rate.
- The calculation for orifice plates shall be produced in accordance with ISO 5167.
- Data sheets shall be submitted for approval by purchaser. The orifice bore diameter shall be as per vendor's approved calculations.
- Vendor shall provide certificate of compliance to NACE MR-0175 requirement for the instrument supplied, wherever specified.
- Beta ratio limits shall be 0.2 to 0.7. For some cases where there is constraint vendor can size for beta ratio of More than 0.7 but however the beta ratio shall not exceed 0.75 as per ISO 5167. The orifice plate thickness shall be As per manufacturer's standard, however as a minimum shall be to ISO 5167 requirements
- Vendor shall supply the orifice plate assembly complete with flanges, gasket, bolt&nuts and jack screws. All orifice flanges shall be as per ANSI B16.5 and orifice plates shall be supplied suitable for the same. Wherever 'FF' flange facing is indicated, the orifice plates shall be suitable for mounting between the flat faced flanges.
- Orifice bore shall not be beveled for the restriction orifice plates.
- IPS-D-IN-103 regarding Orifice Plate Fabrication to be followed by vendor.
- Max acceptable noise level for orifice and restriction orifice plate is 85 dbA in 1m.
- Environmental condition for field instrumentation of Binak Oilfield shall be considered as per the followings:

Maximum ambient temperature: 50 (°C)
 Minimum ambient temperature: 5 (°C)
 Maximum steel surface exposed to sun: 85 (°C)
 Maximum summer dry bulb: 50 (°C)
 DB/RH for Summer HVAC Design: 41 °C / 61 %
 DB FOR Winter HVAC Design: 6 °C

Relative Humidity:

- Maximum Design relative humidity (%): 100
- Minimum Design relative humidity (%): 0

- Necessity of considering multi-stage or multi-hole restriction orifice will be specified after detailed calculation by Vendor.
- Multi-stage restriction orifice shall be ready to install flanged spool type.
- Plate thickness for restriction orifice shall be specified by Vendor. However, minimum plate thickness specified in ISO 5167 shall be followed.

D02



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DATA SHEET FOR ORIFICE PLATE / RESTRICTION ORIFICE

شماره پیمان:

۹۱۸۴ - ۰۷۳ - ۰۵۳

پروژه

بسته کاری

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شماره صفحه: ۵ از ۸

FLOW ELEMENT (ORIFICE PLATE)

GENERAL	1	Tag No.	SEE PAGE 6	
	2	P&ID No.	Service	SEE PAGE 6
	3	Line Size	Schedule	SEE PAGE 6
	4	Piping Class	SEE PAGE 6	
	5	Nace Requirements	SEE PAGE 6	
	6			
PROCESS CONDITION	7	Fluid	Phase	SEE PAGE 6
	8	Design Temperature	Operating Temperature (°C)	SEE PAGE 6
	9	Design Pressure	Operating Pressure (bar-g)	SEE PAGE 6
	10	Minimum Flow Rate	Normal Flow Rate (kg/h)	SEE PAGE 6
	11	Maximum Flow Rate	(kg/h)	SEE PAGE 6
	12	Density (kg/m3)	Molecular Weight	SEE PAGE 6
	13	Viscosity	Gas Compressibility Factor	SEE PAGE 6
	14	Limit On Pressure Drop Across Flowmeter	(bar)	SEE PAGE 6
	15	Cp / Cv	Allowable Press. Drop	SEE PAGE 6
	16	Liquid Vapor Pressure	(bara)	SEE PAGE 6
ORIFICE PLATE	17	Type	Sub Type	Sharp Edge Orifice
	18	Material	316L S.S	
	19	Flow Full Scale	Diff. Pressure Range	SEE PAGE 6
	20	Construction Standard	EN ISO 5167	
	21	Plate Thickness	SEE PAGE 6	
	22	Bore Diameter	SEE PAGE 6	
	23	Beta Ratio (d/D)	SEE PAGE 6	
	24	Drain / Vent Hole	Note 2	
	25			
ORIFICE FLANGE	26	Flange Type	Weld Neck Flanged Tap	
	27	Flange Size	SEE PAGE 6	
	28	Flange Rating	SEE PAGE 6	
	29	Flange Facing	SEE PAGE 6	
	30	Flange Tapping Size	1/2" NPT	
	31	Flange Material	SEE PAGE 6	
	32	Gasket Material	Spiral Wound, Thick.4.45 mm ,SS316 Winding with Stainless Steel Inner and Outer Rings, Graphite Filler, RF(125-250 AARH), ASME B16.20	
PURCHASING DATA	33	Model	Manufacture	Will Be Finalized Later
	34	Supplier	Order	Will Be Finalized Later
	35			

- NOTES : 1) VTA :Vendor To Advice VTC: VENDOR TO CONFIRM
2) A weep hole flush at the bottom of the orifice run to be used for Gas Services and for liquid services at top of the pipe to prevent a build-up of condensate. The hole size is 0.125 in and to be as per standard. (VTC)



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DATA SHEET FOR ORIFICE PLATE / RESTRICTION ORIFICE

شماره پیمان:	پروژه	بسته کاری	صادرکننده	تجهیزات	رشته	نوع مدرک	سریال	نسخه	شماره صفحه: ۶ از ۸
۹۱۸۴ - ۰۳ - ۰۳	BK	GCS	PEDCO	120	IN	DT	0013	D02	

D02 FLOW ELEMENT (ORIFICE PLATE)

Rev.	Item No.	Tag No.	P&ID No.	Service	Line Size	Schedule / C.A	Piping Class	Nace	Fluid	Phase	Temperature (°C)		Pressure (barg)		Flow Rate (Kg/h)			Density (Kg/m3) (Mtx./Liq./Gas)	Specific Gravity (Mtx) Molecular Weight(Kg/Kgram)	Viscosity(Cp) (Gas/Liquid)	Gas Compressibility Factor	Cp / Cv	Liquid Vapor Pressure (barg)	Max. Diff. Pressure Range (mbarg)	Min. Plate Thickness (mm) (VTC)	Bore Diameter (mm) (VTC)	Beta Ratio (d/D) (VTC)	Flange Size	Flange Rating/Facing	Flange Material	Remark	
											Design	Operating	Design	Operating	Min.	Normal	Max.															
D02	1	FE-2101	BK-GCS-PEDCO-120-PR-PI-0002	Gas Compression Inlet Gas Pipeline (Binak)	6"	80 / 6mm	AN07	YES	HC	G	85	46.11	18.2	6.75	-	6564	7220.5	6.66	0.909	26.36	0.011	0.97	1.23	-	250	3.2	66.89	0.46	6"	300#, RF	ASTM A105	
D02	2	FE-2102	BK-GCS-PEDCO-120-PR-PI-0003	Gas Compression Inlet Gas Pipeline (Golkhari)	8"	100 / 6mm	FN07	YES	HC	G	175	32	90	6.75	-	11269	12395.9	6.214	0.8128	23.57	0.011	0.973	1.26	-	250	3.2	89.44	0.45	8"	600#, RF	ASTM A105	
D02	3	FE-2111	BK-GCS-PEDCO-120-PR-PI-0004 (3 of 3)	Slug Catcher System	3"	40 / 3mm	CN05	YES	CONDENSATE	L	155	32	47.7	19.75	-	7160	7876.0	716	0.716	48	0.27 - 0.76	-	1.15	5.5	250	3.2	23.09	0.30	3"	300#, RF	ASTM A105	
D02	4	FE-2271	BK-GCS-PEDCO-120-PR-PI-0022	Fuel Gas System	2"	80 / 6mm	AN07	YES	HC	G	85	36.78	18.2	4.9	-	506	55638.0	5.97	0.8455	24.52	0.011	-	1.25	-	250	3.2	21.49	0.22	2"	300#, RF	ASTM A105	
D02	5	FE-2211	BK-GCS-PEDCO-120-PR-PI-0016	Nitrogen Header	1"	40 / 1mm	AN01	No	NIT	G	85	60	18.2	7.5	-	39	42.5	9.41	0.9662	28.02	0.01	0.99	1.4	-	250	3.2	5.37	0.20	2"	300#, RF	ASTM A105	Meter Run

- Note:
- (1) HC:HYDROCARBONE , L: LIQUID , G: GAS , M: MIXED
 - (2) Vendor shall calculate the bore size & beta for 2 phase orifice plates.
 - (3) BLANK PLATE to be supplied. The bore shall be drilled later by others.
 - (4) Flange with 1/2" NPT tapping, gasket, bolts & nuts shall be supplied by instr. Vendor.
 - (5) No of holes per flange for orifice plates to be specified by vendor.
 - (6) C.A : Corosion Allowance

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DATA SHEET FOR ORIFICE PLATE / RESTRICTION ORIFICE								شماره صفحه: ۸ از ۷
شماره پیمان:	پروژه	بسته کاری	صادر کننده	تسهیلات	رشته	نوع مدرک	سریال	
۹۱۸۴ - ۰۷۳ - ۰۵۳	BK	GCS	PEDCO	120	IN	DT	0013	D02

FLOW ELEMENT (ORIFICE PLATE)				
GENERAL	1	Tag No.	SEE PAGE 8	
	2	P&ID No.	Service	SEE PAGE 8
	3	Line Size	Schedule	SEE PAGE 8
	4	Piping Class	SEE PAGE 8	
	5	Nace Requirements	SEE PAGE 8	
	6			
PROCESS CONDITION	7	Fluid	Phase	SEE PAGE 8
	8	Design Temperature	Operating Temperature (°C)	SEE PAGE 8
	9	Design Pressure	Operating Pressure (bar-g)	SEE PAGE 8
	10	Minimum Flow Rate	Normal Flow Rate (kg/h)	SEE PAGE 8
	11	Maximum Flow Rate	(kg/h)	SEE PAGE 8
	12	Density (kg/m3)	Molecular Weight	SEE PAGE 8
	13	Viscosity	Gas Compressibility Factor	SEE PAGE 8
	14	Limit On Pressure Drop Across Flowmeter	(bar)	SEE PAGE 8
	15	Cp / Cv	SEE PAGE 8	
	16	Liquid Vapor Pressure	(bara)	SEE PAGE 8
ORIFICE PLATE	17	Type	Sub Type	Restriction Device
	18	Material	316L S.S	
	19	Flow Full Scale	Diff. Pressure Range	SEE PAGE 8
	20	Construction Standard	EN ISO 5167	
	21	Plate Thickness	SEE PAGE 8	
	22	Bore Diameter	SEE PAGE 8	
	23	Beta Ratio (d/D)	SEE PAGE 8	
	24	Drain / Vent Hole	-	
ORIFICE FLANGE	26	Flange Type	BY Piping	
	27	Flange Size	SEE PAGE 8	
	28	Flange Rating	SEE PAGE 8	
	29	Flange Facing	SEE PAGE 8	
	30	Flange Material	SEE PAGE 8	
	31	Gasket Material	Spiral Wound, Thick.4.45 mm ,SS316 Winding with Stainless Steel Inner and Outer Rings, Graphite Filler, RF(125-250 AARH), ASME B16.20	
	32			
PURCHASING DATA	33	Model	Manufacture	Will Be Finalized Later
	34	Supplier	Order	Will Be Finalized Later
	35			
NOTES : VTA :VENDOR TO ADVISE VTC: VENDOR TO CONFIRM				



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DATA SHEET FOR ORIFICE PLATE / RESTRICTION ORIFICE

شماره پیمان:

۰۵۳ - ۰۷۳ - ۹۱۸۴

نسخه	سرپال	نوع مدرک	رشته	تهیهات	صادرکننده	بسته کاری	پروژه
D02	0013	DT	IN	120	PEDCO	GCS	BK

شماره صفحه: ۸ از ۸

D02 RESTRICTION ORIFICE

Rev.	Item No.	Tag No.	P&ID No.	Service	Line Size	Schedule / C.A	Piping Class	Nace	Fluid	Phase	Temperature (°C)		Pressure (barg)		Flow Rate (Kg/h)			Density (Kg/m ³) (Mix./Liq./Ga)	Specific Gravity (Mix)	Molecular Weight(Kg/Kgmol)	Viscosity(CP) (Gas/Liquid)	Gas Compressibility Factor	Cp / Cv	Liquid Vapor Pressure (barg)	Max. Diff. Pressure (barg)	Min Plate Thickness (mm) (VTC)	Bore Diameter (mm) (VTC)	Beta Ratio (d/D) (VTC)	Flange Size	Flange Rating/Facing	Flange Material	Remark
											Design	Operating	Design	Operating	Min.	Normal	Max.															
D02	1	RO-2112	BK-GCS-PEDCO-120-PR-PI-0005	Gas Compression Inlet Knock Out Drum	3"	80 / 6mm	AN07	YES	HC	G	85	36.87	18.2	9	-	5665.4	-	5.96~9.264	0.743~0.845	21.56~ 24.52	0.010	-	1.246~1.260	-	4.5	Note 14	34.60	0.47	3"	300# , RF	ASTM A105	
D02	2	RO-2133A	BK-GCS-PEDCO-120-PR-PI-0011 (1 of 3)	2nd Stage Gas Compression Air Coolers	1 1/2"	40S / 0mm	FS00	YES	HC	G	175	60	62.4	62	-	1333	-	59.63 ~ 72.94	0.743~0.845	21.56~ 24.52	0.011	-	1.457~1.692	-	55	Note 14	6.32	0.19	1 1/2"	600# , RF	ASTM A182 GR.F316L	
D02	3	RO-2133B	BK-GCS-PEDCO-120-PR-PI-0011 (2 of 3)	2nd Stage Gas Compression Air Coolers	1 1/2"	40S / 0mm	FS00	YES	HC	G	175	60	62.4	62	-	1333	-	59.63 ~ 72.94	0.743~0.845	21.56~ 24.52	0.011	-	1.457~1.692	-	55	Note 14	6.32	0.19	1 1/2"	600# , RF	ASTM A182 GR.F316L	
D02	4	RO-2133C	BK-GCS-PEDCO-120-PR-PI-0011 (3 of 3)	2nd Stage Gas Compression Air Coolers	1 1/2"	40S / 0mm	FS00	YES	HC	G	175	60	62.4	62	-	1333	-	59.63 ~ 72.94	0.743~0.845	21.56~ 24.52	0.011	-	1.457~1.692	-	55	Note 14	6.32	0.19	1 1/2"	600# , RF	ASTM A182 GR.F316L	
D02	5	RO-2141	BK-GCS-PEDCO-120-PR-PI-0012	2nd Stage Gas Compression Discharge Drum	1 1/2"	160 / 3mm	FN05	YES	HC	G	175	60	90	62	-	1722	-	59.17 ~ 72.94	0.743~0.847	21.56~24.56	0.011	-	1.461~1.692	-	55	Note 14	7.18	0.21	1 1/2"	600# , RF	ASTM A105	
D02	6	RO-2144	BK-GCS-PEDCO-120-PR-PI-0012	Gas Compression Discharge Drum	2"	40S / 0mm	FS00	YES	HC	L	175	60	62.4	53.9	-	11500	-	982.00	0.982	18.05	0.495	-	1.163	15.58	53.7	Note 14	7.081	0.13	2"	600# , RF	ASTM A182 GR.F316L	
D02	7	RO-2151	BK-GCS-PEDCO-120-PR-PI-0013 (1 of 3)	Gas Compression Dehydration Package	3"	80 / 3mm	FN05	YES	HC	G	175	59.4	90	62	-	4578	-	58.06 ~ 72.94	0.743~0.848	21.56~24.58	0.011	0.825	1.212~1.692	-	55	Note 14	11.70	0.16	3"	600# , RF	ASTM A105	
D02	8	RO-2162	BK-GCS-PEDCO-120-PR-PI-0014	Lean Glycol Storage Tank	2"	80 / 3mm	AN04	NO	TEG	L	85	AMB	18.2	2.07	-	5575	6132.5	1115	1.115	150.2	23.778	-	1.042	-1.01	2.06	Note 14	11.33	0.22	2"	300# , RF	ASTM A105	Finalized after received data from vendor. Multi stage design shall be
D02	9	RO-2131A	BK-GCS-PEDCO-120-PR-PI-0009 (1 of 3)	CLOSED DRAIN HEADER	2"	10S / 0mm	CS00	YES	HC+WATER	L	155	60	30.3	18.10	-	10000	-	829.1	0.82909432	18.03	0.444	-	1.326	2.23	17.9	Note 14	8.67	0.16	2"	300# , RF	ASTM A182 GR.F316L	
D02	10	RO-2131B	BK-GCS-PEDCO-120-PR-PI-0009 (2 of 3)	CLOSED DRAIN HEADER	2"	10S / 0mm	CS00	YES	HC+WATER	L	155	60	30.3	18.10	-	10000	-	829.1	0.82909432	18.03	0.444	-	1.326	2.23	17.9	Note 14	8.67	0.16	2"	300# , RF	ASTM A182 GR.F316L	
D02	11	RO-2131C	BK-GCS-PEDCO-120-PR-PI-0009 (3 of 3)	CLOSED DRAIN HEADER	2"	10S / 0mm	CS00	YES	HC+WATER	L	155	60	30.3	18.10	-	10000	-	829.1	0.82909432	18.03	0.444	-	1.326	2.23	17.9	Note 14	8.67	0.16	2"	300# , RF	ASTM A182 GR.F316L	
D02	12	RO-2134A	BK-GCS-PEDCO-120-PR-PI-0009 (1 of 3)	LP FLARE HEADER	2"	80 / 3mm	CN05	YES	HC	G	155	60	47.7	22.00	-	778	-	18.08 ~ 22.31	0.743~0.846	21.56~24.52	0.011	-	1.278~1.362	-	250	Note 14	8.50	0.17	2"	300# , RF	ASTM A105	
D02	13	RO-2134B	BK-GCS-PEDCO-120-PR-PI-0009 (2 of 3)	LP FLARE HEADER	2"	80 / 3mm	CN05	YES	HC	G	155	60	47.7	22.00	-	778	-	18.08 ~ 22.31	0.743~0.846	21.56~24.52	0.011	-	1.278~1.362	-	250	Note 14	8.50	0.17	2"	300# , RF	ASTM A105	
D02	14	RO-2134C	BK-GCS-PEDCO-120-PR-PI-0009 (3 of 3)	LP FLARE HEADER	2"	80 / 3mm	CN05	YES	HC	G	155	60	47.7	22.00	-	778	-	18.08 ~ 22.31	0.743~0.846	21.56~24.52	0.011	-	1.278~1.362	-	250	Note 14	8.50	0.17	2"	300# , RF	ASTM A105	

- Note:
- (1) HC:HYDROCARBONE , L: LIQUID , G: GAS , M: MIXED
 - (2) Vendor shall calculate the bore size & beta for 2 phase orifice plates.
 - (3) BLANK PLATE to be supplied. The bore shall be drilled later by others.
 - (4) C.A : Corosion Allowance