

	نگهداشت و افزایش تولید میدان نفتی بینک سطح الارض و ابنیه تحت الارض خرید پکیج های کمپرسور گاز (رفت و برگشتی) بینک (قرارداد BK-HD-GCS-CO-0008_03)		 					
	شماره پیمان: 053 - 073 - 9184	DATASHEET FOR CONTROL/REGULATOR VALVES		شماره صفحه : 1 از 7				
	پروژه BK	بسته کاری GCS	صادر کننده HY	تسهیلات 120	رشته IN	نوع مدرک DS	سریال 0002	نسخه V00

طرح نگهداشت و افزایش تولید 27 مخزن

DATASHEET FOR CONTROL/REGULATOR VALVES

نگهداشت و افزایش تولید میدان نفتی بینک

V00	Aug.2023	IFR	Havayar Co.	M.Fakharian	A.M.Mohseni	
Rev.	Date	Purpose of Issue/Status	Prepared by:	Checked by:	Approved by:	CLIENT Approval
Class:						
Status:						
IFA: Issued For Approval IFR: Issued For Review IFI: Issued For Information AFC: Approved For Construction						

 NISOC	نگهداشت و افزایش تولید میدان نفتی بینک سطح الارض و ابنیه تحت الارض خرید پکیج های کمپرسور گاز (رفت و برگشتی) بینک (قرارداد 03_BK-HD-GCS-CO-0008)		 HAVAYAR INDUSTRIAL GROUP	
	شماره پیمان: 053-073-9184		شماره صفحه: 2 از 7	

REVISION RECORD SHEET

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2	X				
3	X				
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		نگهداشت و افزایش تولید میدان نفتی بینک سطح الارض و ابنیه تحت الارض								
		خرید پکیج های کمپرسور گاز (رفت و برگشتی) بینک (قرارداد 03 BK-HD-GCS-CO-0008)								
شماره پیمان: 053-073-9184		DATASHEET FOR CONTROL/REGULATOR VALVES							Page 3 of 7	
		BK	GCS	HY	120	IN	DS	0002	V00	
General	1	Instrument Name				PRESSURE REGULATOR				
	2	Tag Number		P&ID No.		PCV-2120A/B/C			BK-GCS-HY-120-PR-PI-0001 page2/9	
	3	Service		Pipe No.		Instrument Air			ISA-112-2118A-AZ00-2"-NP	
	4	Pipe O. D. /I. D. mm		Pipe Class		2"			AZ00	
	5	Pipe Material		Pipe Insulation		Galvanized Carbon steel			NP	
Process Conditions	6	Fluid		State		Instrument Air			Gas	
	7	Design Pressure bar(g)		Max. Shut-Off DP. bar(g)		12.5			12.5	
	8	Operating Temperature °C		Design Temperature °C		65			85	
	9	Operating Density kg/m3		Standard Density kg/Nm3		9.3				
	10	Kinetic Viscosity (mm2/S)		Dynamic Viscosity (cP)		2.27E-03			2.11E-02	
	11	Speci. Heat Ratio Cp/Cv		Compress Factor		1.417			0.9982	
	12	Vapor Pressure		Critical Pressure (barg)					36.73	
	13	Flow Rate kg/h(Liquid,Steam),Nm3/h(Gas)				Unit	Min. Flow		Nor. Flow	Max. Flow
	14	Inlet Pressure				bar(g)	4.5		6	8
	15	Outlet Pressure				bar(g)			6	
Calculation Data	16	Sizing Cv					VTS			
	17	Valve Travel				%			VTS	
	18	Allowable SPL dBA		Predicated SPL dBA		<85 dB			N/A	
	19	Rated Cv		Valve FI		VTS			N/A	
Valve Body/Bonnet	20	Model				Self-operated				
	21	Body Type		Control Mode		Globe			SELF	
	22	Body Size		End Connection & Rating		2"			Flange,300# RF	
	23	Allowable Operating Temperature °C		Pressure Rating						
	24	Bonnet Type		Flow Direction		Bolted			N/A	
	25	Body Material		Stem/Shaft Material		Galvanized Carbon steel			316SS	
Trim	26	Trim Type		Trim Size		Standard			Standard	
	27	Trim Material		Seat Material		316 S.S			316 S.S	
	28	Guiding		Packing Material		316 S.S			PTFE	
	29	Characteristics		Seat Leakage Class		Linear			IV	
Actuator	30	Model		Type		Diaphragm			Spring &Diaphragm	
	31	Pilot		Restrictor Type		N/A			Internal	
	32	Restrictor Input		Ext. Connection Size		DOWNSTREAM			-	
	33	Up Inlet Valve		Down Inlet Valve		-			-	
	34	Seal Type		Spring Material		Steel			S.S	
	35	Diaph. Temperature Rating		Diaph. Pressure Rating		50			12	
	36	Diaphragm Material		Available D. P.		Steel				
	37	Pressure Set Point				6				
	38	Temperature Assembly		Capillary Length		-			-	
	39	Fail Position		Tubing&Fitting		Open			316 S.S	
	40	Enclosure Protection				IP65				
Accessories	41	Filter		Mesh Size		-			-	
	42	Condenser		Check Valve		-			-	
	43	Inlet Gauge		Control Gauge		-			-	
Miscell.	44	Manufacturer				HOLD				
	45	Requisition No.				HOLD				

NOTES:
 1- Each Instrument Shall Have a S.S. Tag Plate With Purchaser's Tag Number, The Tag Plate Shall Be Permanently Attached To The Instrument .

		نگهداشت و افزایش تولید میدان نفتی بینک سطح الارض و ابنیه تحت الارض								
		خرید پکیج های کمپرسور گاز (رفت و برگشتی) بینک (قرارداد BK-HD-GCS-CO-0008_03)								
شماره پیمان: 053-073-9184		DATASHEET FOR CONTROL/REGULATOR VALVES							Page 4 of 7	
		BK	GCS	HY	120	IN	DS	0002	V00	
General	1	Instrument Name				PRESSURE REGULATOR				
	2	Tag Number		P&ID No.		PCV-2205			BK-GCS-HY-120-PR-PI-0001-page:4	
	3	Service		Pipe No.		N2 Gas Supply			NIT-112-2129A-AS00-1"-NP	
	4	Pipe O. D. /I. D. mm		Pipe Class		1"			AS00	
	5	Pipe Material		Pipe Insulation		SS316L			NP	
Process Conditions	6	Fluid		State		Nitrogen			Gas	
	7	Design Pressure bar(g)		Max. Shut-Off DP. bar(g)		12.5			12.5	
	8	Operating Temperature °C		Design Temperature °C		60			85	
	9	Operating Density kg/m3		Standard Density kg/Nm3		8.62				
	10	Kinetic Viscosity (mm2/S)		Dynamic Viscosity (cP)		2.32E-03			2.00E-02	
	11	Speci. Heat Ratio Cp/Cv		Compress Factor		1.408			0.9989	
	12	Vapor Pressure		Critical Pressure		NA			NA	
	13	Flow Rate				Unit	Min. Flow		Nor. Flow	Max. Flow
		kg/h(Liquid,Steam),Nm3/h(Gas)				Nm3/h	0.3		3	
14	Inlet Pressure				Bar(g)			7.5		
15	Outlet Pressure				Bar(g)			1		
Calculation Data	16	Sizing Cv								
	17	Valve Travel				%				
	18	Allowable SPL dBA		Predicated SPL dBA		<85 dB			N/A	
	19	Rated Cv		Valve FI		VTS			N/A	
Valve Body/Bonnet	20	Model				Self-operated				
	21	Body Type		Control Mode		Globe			SELF	
	22	Body Size		End Connection & Rating		1"			Flange,300# RF	
	23	Allowable Operating Temperature °C		Pressure Rating		150			16barg	
	24	Bonnet Type		Flow Direction		Bolted			N/A	
	25	Body Material		Stem/Shaft Material		316SS			316SS	
Trim	26	Trim Type		Trim Size		Standard			Standard	
	27	Trim Material		Seat Material		316 S.S			316 S.S	
	28	Guiding		Packing Material		S.S316			PTFE	
	29	Characteristics		Seat Leakage Class		Linear			IV	
Actuator	30	Model		Type		Diaphragm			Spring&Diaphragm	
	31	Pilot		Restrictor Type		N/A			Internal	
	32	Restrictor Input		Ext. Connection Size		DOWNSTREAM			-	
	33	Up Inlet Valve		Down Inlet Valve		-			-	
	34	Seal Type		Spring Material		S.S			S.S	
	35	Diaph. Temperature Rating		Diaph. Pressure Rating		65			12	
	36	Diaphragm Material		Available D. P.		S.S				
	37	Pressure Set Point				1 Barg				
	38	Temperature Assembly		Capillary Length		-			-	
	39	Fail Position		Tubing&Fitting		Open			Min 316 S.S	
	40	Enclosure Protection				-				
Accessories	41	Filter		Mesh Size		-			-	
	42	Condenser		Check Valve		-			-	
	43	Inlet Gauge		Control Gauge		-			-	
Miscell.	44	Manufacturer								
	45	Requisition No.								

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		خرید پکیج های کمپرسور گاز (رفت و برگشتی) بینک (قرارداد BK-HD-GCS-CO-0008_03)								
شماره پیمان: 053-073-9184		DATASHEET FOR CONTROL/REGULATOR VALVES							Page 5 of 7	
		BK	GCS	HY	120	IN	DS	0002	V00	
General	1	Instrument Name				PRESSURE REGULATOR				
	2	Tag Number		P&ID No.		PCV-2206			BK-GCS-HY-120-PR-PI-0001-page:4	
	3	Service		Pipe No.		N2 Gas Supply			NIT-112-2128A-AS00-1"-NP	
	4	Pipe O. D. /I. D. mm		Pipe Class		1"			AS00	
	5	Pipe Material		Pipe Insulation		SS316L			NP	
Process Conditions	6	Fluid		State		Nitrogen			Gas	
	7	Design Pressure bar(g)		Max. Shut-Off DP. bar(g)		12.5			12.5	
	8	Operating Temperature °C		Design Temperature °C		60			85	
	9	Operating Density kg/m3		Standard Density kg/Nm3		8.62				
	10	Kinetic Viscosity (mm2/S)		Dynamic Viscosity (cP)		2.32E-03			2.00E-02	
	11	Speci. Heat Ratio Cp/Cv		Compress Factor		1.408			0.9989	
	12	Vapor Pressure		Critical Pressure		NA			NA	
	13	Flow Rate				Unit	Min. Flow		Nor. Flow	Max. Flow
		kg/h(Liquid,Steam),Nm3/h(Gas)				Nm3/h	0.3		3	
14	Inlet Pressure				Bar(g)			7.5		
15	Outlet Pressure				Bar(g)			2.2		
Calculation Data	16	Sizing Cv								
	17	Valve Travel				%				
	18	Allowable SPL dBA		Predicated SPL dBA		<85 dB			N/A	
	19	Rated Cv		Valve FI		VTS			N/A	
Valve Body/Bonnet	20	Model				Self-operated				
	21	Body Type		Control Mode		Globe			SELF	
	22	Body Size		End Connection & Rating		1"			Flange,300# RF	
	23	Allowable Operating Temperature °C		Pressure Rating						
	24	Bonnet Type		Flow Direction		Bolted			N/A	
	25	Body Material		Stem/Shaft Material		316SS			316SS	
Trim	26	Trim Type		Trim Size		Standard			Standard	
	27	Trim Material		Seat Material		316 S.S			316 S.S	
	28	Guiding		Packing Material		S.S316			PTFE	
	29	Characteristics		Seat Leakage Class		Linear			IV	
Actuator	30	Model		Type		Diaphragm			Spring&Diaphragm	
	31	Pilot		Restrictor Type		N/A			Internal	
	32	Restrictor Input		Ext. Connection Size		Downstream			-	
	33	Up Inlet Valve		Down Inlet Valve		-			-	
	34	Seal Type		Spring Material		S.S			S.S	
	35	Diaph. Temperature Rating		Diaph. Pressure Rating		65			12	
	36	Diaphragm Material		Available D. P.		S.S				
	37	Pressure Set Point				2.2 Barg				
	38	Temperature Assembly		Capillary Length		-			-	
	39	Fail Position		Tubing&Fitting		Open			Min 316 S.S	
	40	Enclosure Protection				-				
Accessories	41	Filter		Mesh Size		-			-	
	42	Condenser		Check Valve		-			-	
	43	Inlet Gauge		Control Gauge		-			-	
Miscell.	44	Manufacturer								
	45	Requisition No.								

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		نگهداشت و افزایش تولید میدان نفتی بینک سطح الارض و ابنیه تحت الارض									
		خرید پکیج های کمپرسور گاز (رفت و برگشتی) بینک (BK-HD-GCS-CO-0008_03 قرارداد)									
		DATASHEET FOR CONTROL/REGULATOR VALVES									
Contract No:		Project	Package	Issuer	Facility	Dicipline	Doc.	Sequence	Rev	Page 6 of 7	
053-073-9184		BK	GCS	HY	120	IN	DS	0002	V00		
TAG NO. : PCV-2123						P&ID NO. : BK-GSC-HY-120-PR-PI-001-Rev.01 Page 1 /3					
SERVICE CONDITIONS	FLUID :	Hydrocarbon									
		UNITS	MIN. FLOW	NORM. FLOW	MAX. FLOW	SHUT-OFF					
	STATE		Two Phase (Note 1)	Two Phase (Note 1)	Two Phase (Note 1)	-					
	GAS MASS FLOW RATE	Kg/hr	2166	8664	9530	-					
	INLET PRESSURE	barg	54.1	54.1	54.1	-					
	PRESSURE DIFFERENTIAL	bar	49	49	49	-					
	INLET TEMPERATURE	°C	60	60	60	-					
	MOLECULAR WEIGHT/SPECIFIC GRAVITY	M	24.52	24.52	24.52	-					
	DYNAMIC VISCOSITY	cP	0.0142	0.0142	0.0142	-					
	RATIO OF SPECIFIC HEATS		1.457	1.457	1.457	-					
	INLET COMPRESSIBILITY FACTOR		0.8229	0.8229	0.8229	-					
	*REQUIRED C _v		VTs	VTs	VTs	-					
	*TRAVEL	%	VTs	VTs	VTs	-					
ALLOWABLE/*PREDICTED SPL	dba	< 85	< 85	< 85	-						
VALVE BODY/BONNET	PIPE LINE SIZE	6"		46	*TYPE Spring Diaphragm						
	PIPE LINE Mat. / INSULATION	Stainless Steel / No Insulation		47	*MFR & MODEL VTS						
				48	*SIZE VTS EFF. AREA VTS						
	*TYPE	Globe Valve		49	ON/OFF MODULATING: YES						
	*SIZE /RATING	2 1/2 ~ 3 (VTS) , #600, Line Sch.40S		50	SPRING ACTION OPEN/CLOSE AIR TO OPEN						
	DESIGN PRESS/TEMP.	62 barg /180 °C		51	*MAX. ALLOWABLE PRESSURE 10barg						
	*MFR & MODEL			52	*MIN REQUIRED PRESSURE 4barg						
	*BODY/BONNET MATL	Body: A351 Gr. CF3M		53	AVAILABLE AIR SUPPLY PRESSURE (barg) 4 barg						
	*LINER MATERIAL/ID	VTS		54	MAX: 10 barg MIN: 3 b 4barg						
	END CONNECTION	Flanged		55	*BENCH RANGE -						
	FLG. FACE FINISH	Raised Face, SF		56	ACT ORIENTATION Horizontal						
	END EXT/MATL			57	HANDWHEEL TYPE N/A						
	*FLOW DIRECTION			58	AIR FAILURE VALVE: Yes,Open SET AT -						
*TYPE OF BONNET	Bolted Bonnet		59	INPUT SIGNAL 4-20 mA							
LUB & ISO VALVE			60	*TYPE: Smart HART							
*PACKING MATERIAL	Teflon-Chevron		61	*MFR & MODEL VTS AIR CONN.: 1/4" NPTF							
*PACKING TYPE			62	*ON INCR SIGNAL OUTPUT INCR/DECR: VALVE CLOSE ON INCREASE SIGNAL OUTPUT							
TRIM	*TYPE	As a Minimum: AISI 316 - Trim No. 10		63	GAUGES: YES BYPASS YES						
	*SIZE	*RATED TRAVEL		64	MATERIAL Aluminum						
	*CHARACTRISTIC	EQ%		65	ENCLOSURE CLASS EX ia , IIB, T4						
	*BALANCED / UNBALANCED	VTS		66	INGRESS PROTECTION IP 66						
	*RATED C _v : F _L XT	VTS		67	OUTPUT 4-20 mA EX ia , IIB, T4 TAG NO.						
	*PLUG/BALL/DISK MATERIAL	316 (18Cr-8Ni-Mo)		68	AUXILIARY POWER 24 VDC						
	*SEAT MATERIAL	316 (18Cr-8Ni-Mo)		69	HOUSING MATERIAL Included in Positioner						
	*CAGE/GUIDE MATERIAL	VTS		70	INGRESS PROTECTION IP66						
	*STEM MATERIAL	316 (18Cr-Ni-Mo)		71	*MFR & MODEL VTS AIR CONN.: 1/4" NPTF						
	*GASKET MATERIAL	Spiral Wound, 4.45 mm Thick., RF, SF, S.S 316 Winding/ Graphite Filler, C.S. Outer& S.S 316L Inner Ring ASME B16.20		72	*SET PRESSURE 4 barg						
				73	FILTER: Yes GAUGE: Yes						
	ACCESSORIES	SOLENOID VALVE:	YES, Body S.S316		74	*HYDRO PRESSURE Yes					
		COIL RATING:	Class F		75	ANSI/FCI LEAKAGE CLASS: IV					
SUPPLY VOLTAGE		24VDC		76							
INGRESS PROTECTION		IP66 , Exd IIB T4									
Limit Switch (Open/Close)		Limit switch box Body Aluminum-24vdc-IP66 , Exd IIB T4									
NOTES: 1- See gas composition in attachment. 2- M20 x 1.5 Cable gland shall be provided by vendor. 3- VTS: Vendor to Specifiy, VTC: Vendor to Confirm, N/A: Not Applicable 4- Trim number shall be confirmed by Vendor. 5- All material shall be in compliance with NACE MR0175. 6-LEAKAGE CLASS IV * All information shall be confirmed by Vendor.											



نگهداشت و افزایش تولید میدان نفتی بینک
سطح الارض و ابنيه تحت الارض

خرید پکیج های کمپرسور گاز (رفت و برگشتی) بینک
(BK-HD-GCS-CO-0008.03 قرارداد)

DATASHEET FOR CONTROL/REGULATOR VALVES



Contract No:	Project	Package	Issuer	Facility	Dicipline	Doc.	Sequence	Rev	Page 7 of 7
053-073-9184	BK	GCS	HY	120	IN	DS	0002	V00	

			Summer	Winter
	M.W.			
AIR		28.966		
OXYGEN	O ₂	32.000		
NITROGEN	N ₂	28.016	0.298400	0.310100
WATER VAPOR	H ₂ O	18.016	1.031400	0.363775
CARBON MONOX.	CO	28.010		
CARBON DIOX.	CO ₂	44.010	3.160600	2.520200
HYDRO. SULFIDE	H ₂ S	34.076	5.411900	4.705600
HYDROGEN	H ₂	2.016		
METHANE	CH ₄	16.042	63.892100	73.980900
ETHYLENE	C ₂ H ₄	28.052		
ETHANE	C ₂ H ₆	30.068	13.751500	11.424900
PROPYLENE	C ₃ H ₆	42.078		
PROPANE	C ₃ H ₈	44.094	7.731400	4.737100
I-BUTANE	C ₄ H ₁₀	58.120	0.839400	0.394200
n-BUTANE	C ₄ H ₁₀	58.120	1.859400	0.813000
I-PENTANE	C ₅ H ₁₂	72.146	0.696800	0.306600
n-PENTANE	C ₅ H ₁₂	72.146	0.377400	0.145000
n-Hexane			0.654900	0.222400
n-Heptane			0.195600	0.054200
n-Octane			0.059600	0.014900
n-Nonane			0.029700	0.007100
n-Decane			0.009900	0.000000
n-C11			0.000000	0.000000
AMMONIA	NH ₃	17.031		
HYDRO. CHLOR.	HCl	36.461		
CHLORINE	Cl ₂	70.914		
CHLORIDES - TRACES				
Corrosive Agents			H2S/CO2	H2S/CO2
total			100	100
☐ CALCULATED MOL WT.			24.52	24.52