



NISOC

نگهداشت و افزایش تولید میدان نفتی بینک
سطح الارض و ابنیه تحت الارض/ایستگاه تقویت فشار گاز
خرید پکیج های کمپرسور گاز (رفت و برگشتی) بینک
(قرارداد BK-HD-GCS-CO-0008_03)



DETAILED D/SH FOR COMPRESSOR (API-618) WITH CERTIFICATES

شماره پیمان:

۰۵۳ - ۰۷۳ - ۹۱۸۴

پروژه

BK

بسته کاری

GCS

صادر کننده

HY

تجهیزات

120

رشته

ME

نوع مدرک

DS

سریال

0001

نسخه

V01

شماره صفحه: 1 از 23

طرح نگهداشت و افزایش تولید ۲۷ مخزن

DETAILED DATA SHEET FOR GAS COMPRESSORS

نگهداشت و افزایش تولید میدان نفتی بینک

V01	JULY.2023	IFR	Havayar Co.	M.Fakharian	A.M.Mohseni	
V00	FEB.2023	IFR	Havayar Co.	M.Fakharian	M.Mehrshad	
Rev.	Date	Purpose of Issue / Status	Prepared by:	Checked by:	Approved by:	CLIENT Approval

Class: 2

CLIENT Doc. Number:

status:

IFA: Issued For Approval (For Docs. with Class#1)

IFR: Issued For Review (For Docs. with Class#2)

IFI: Issued For Information (For Docs. with Class#3)

AFC: Approved For Construction

 NISOC	تجهیزات و افزایش تولید میدان نفتی بینک سطح الارض و ابنیه تحت الارض / بسته ایستگاه تقویت فشار گاز خرید پکیج های کمپرسور گاز (رفت و برگشتی) بینک (قرارداد BK-HD-GCS-CO-0008_03)						  HAVAYAR INDUSTRIAL GROUP		
	DETAILED D/SH FOR COMPRESSOR (API-618) WITH CERTIFICATES								
شماره پیمان: ۰۵۳ - ۰۷۳ - ۹۱۸۴	پروژه BK	بسته کاری GCS	صادر کننده HY	تجهیزات 120	رشته ME	نوع مدرک DS	سریال 0001	نسخه V00	شماره صفحه: 2 از 23

REVISION RECORD SHEET

Page	V00	V01	V02	V03	V04	V05	V06
1	X	X					
2	X	X					
3	X	X					
4	X	X					
5	X	X					
6	X	X					
7	X	X					
8	X	X					
9	X	X					
10	X	X					
11	X	X					
12	X	X					
13	X	X					
14	X	X					
15	X	X					
16	X	X					
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 NISOC	نگهداشت و افزایش تولید میدان نفتی بینک سطح الارض و ابنیه تحت الارض/ بسته ایستگاه تقویت فشار گاز خرید پکیج های کمپرسور گاز (رفت و برگشتی) بینک قرارداد (BK-HD-GCS-CO-0008_03)	 HAVAYAR INDUSTRIAL GROUP
شماره پیمان: 053 - 073 - 9184	DETAILED D/SH FOR COMPRESSOR (API-618) WITH CERTIFICATES	
	نسخه سریال نوع مدرک رشته تسهیلات صادرکننده بسته کاری پروژه	
	BK GCS HY 120 ME DS 0001 V01	
شماره صفحه : 3 از 23		

1	APPLICABLE TO: ☐ PROPOSALS ☒ PURCHASE ☐ AS BUILT
2	FOR/USER NISOC SITE/LOCATION Binak Oil Field SERVICE Sour Gas NO. REQ'D 2 Operating / 1 Spare
3	NOTE: ☐ INDICATES INFO. TO BE COMPLETED BY PURCH. ☐ BY MANUFACTURER WITH PROPOSAL ☒ BY MANUFACTURER AFTER ORDER ☒ BY MANUFACTURER OR PURCHASER AS APPLICABLE
4	
5	COMPR. MFRG Havayar / Kwangshin TYPE MODEL NO(S) KSOPT SERIAL NO(S) C-2101&C-2102 A/B/C
6	COMPR.THROWS: TOTAL NO. 2 NO. WITH CYLS. 2 NOMINAL FRAME RATING 1050 BkW @ RATED R/MIN OF 420
7	☒ MAX/MIN ALLOWABLE SPEED / r/min
8	DRIVER MFRG. As per Sub vendor List DRIVER NAMEPLATE kW/OPERATING r/min 1050 / 420
9	DRIVE SYSTEM: ☒ DIRECT COUPLED ☐ GEARED & COUPLED ☐ V-BELT
10	TYPE OF DRIVER: ☒ IND. MOTOR ☐ SYN. MOTOR ☐ STEAM TURBINE ☐ GAS TURBINE ☐ ENGINE ☐ OTHER
11	CYLINDERS CONSTRUCTION: ☒ LUBE ☐ NON-LUBE
12	
13	☒ MAX ACCEPTABLE AVG PISTON SPEED 4 m/s
14	
15	OPERATING CONDITIONS (EACH MACHINE)
16	☒ SERVICE OR ITEM NO. Continious Continious Continious Continious
17	☒ STAGE 1st 2nd 1st 2nd
18	☒ NORM. OR ALT. CONDITION Summer Winter
19	☒ CERTIFIED PT. (X) MARK ONE x
20	☒ MOLECULAR WEIGHT 24.52 24.52 21.56 21.56
21	☒ Cp/Cv (K) @ 65°C OR 1.245 1.278 1.28 1.295
22	☒ INLET CONDITIONS: AT INLET TO: ☒ PULSE DEVICES ☒ COMPRESSOR CYLINDER FLANGES
23	NOTE: ☐ SIDE STREAM TO STAGE(S), THESE INLET PRESS. ARE FIXED
25	☒ PRESSURE (barg) @ PUL. SUPP. INLET 4.9 - 4.9 -
26	☒ PRESSURE (barg) @ CYL. FLANGE 4.8 17.4 4.8 17.4
27	☒ TEMPERATURE (°C) 36.8 59.9 18.9 59.9
28	☐ REC: SIDE STREAM TEMPS (°C)
29	☒ COMPRESSIBILITY (Zs) 0.975 0.936 0.977 0.951
30	INTERSTAGE: INTERSTAGE Δ P INCL: ☐ PULSE DEVICES ☐ PIPING ☐ COOLERS ☐ SEPARATORS ☐ OTHER
32	☒ ΔP BETWEEN STAGES, %/bar / / / /
33	DISCHARGE CONDITIONS: AT OUTLET FROM: ☒ PULSE DEVICE ☒ COMP. CYL. FLANGES ☐ OTHER
35	☒ PRESSURE (barg) @ CYL. FLANGE 18.25 54.9 18.25 54.9
36	☒ PRESS. (barg) @ PUL. SUPP. OUTLET - 54.8 - 54.8
37	☐ TEMP., ADIABATIC, °C
38	☒ TEMP., PREDICTED, °C 129 146 116 150
39	☒ COMPRESSIBILITY APR.2023 0.964 0.923 0.970 0.948
40	* CAPACITY AT INLET TO COMPRESSOR, NO NEGATIVE TOLERANCE (-0%)
41	☒ kg/h CAPACITY SPECIFIED 8664 8664 7585 7585
42	IS ☒ WET ☐ DRY
43	☒ Nm³/h (1 atm & 0 °C) 7918 7918 7887 7887
44	* MFRG.'S RATED CAPACITY (AT INLET TO COMPRESSOR & kW @ CERTIFIED TOLERANCE OF ±3% FOR CAP. & ±3% FOR kW)
45	☒ kg/h CAPACITY SPECIFIED 8935.5 8935.5 8343.5 8343.5
46	IS ☒ WET ☐ DRY
47	☒ INLET VOLUME FLOW (m³/h) 1589 1589
48	☒ Nm³/h (1.013 bar & 0°C) 8162.9 8162.9 8668.6 8668.6
49	☒ BkW/STAGE 441.1 450.8 435.2 468.5
50	☒ TOTAL BkW @ COMPRESSOR SHAFT 891.8 903.7
51	☒ TOTAL kW INCLUDING
52	V-BELT & GEAR LOSSES
53	* CAPACITY FOR NNT
54	REMARKS: 10% over-design is considered for winter case based on basic documents.
55	MANUFACTURER'S = REQUIRED ÷ 0.97 Total kW including loss at PSV set pressure (60.8 barg): 949.8 kw THEREFORE REQUIRED = MFR'S x 0.97

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شماره پیمان: 053 - 073 - 9184		DETAILED D/SH FOR COMPRESSOR (API-618) WITH CERTIFICATES						شماره صفحه: 4 از 23	
		نسخه 0001 سریال DS نوع مدرک ME رسته 120 تسهیلات HY صادرکننده GCS بسته کاری BK پروژه							

GAS ANALYSIS AT OPERATING CONDITIONS MOLE % (BY VOLUME) ONLY								REMARKS	
● SERVICE/ITEM NO. ● STAGE ● NORMAL OR ALT		M.W.	Continuous		Continuous				
			1st	2nd	1st	2nd			
			Summer		Winter				
7	AIR	28.966							
8	OXYGEN O ₂	32.000							
9	NITROGEN N ₂	28.016	0.2984	0.2984	0.3101	0.3101			
10	WATER VAPOR H ₂ O	18.016	1.0314	1.0314	0.3638	0.3638			
11	CARBON MONOX. CO	28.010							
12	CARBON DIOX. CO ₂	44.010	3.1606	3.1606	2.5202	2.5202			
13	HYDRO. SULFIDE H ₂ S	34.076	5.4119	5.4119	4.7056	4.7056			
14	HYDROGEN H ₂	2.016							
15	METHANE CH ₄	16.042	63.8921	63.8921	73.9809	73.9809			
16	ETHYLENE C ₂ H ₄	28.052							
17	ETHANE C ₂ H ₆	30.068	13.7515	13.7515	11.4249	11.4249			
18	PROPYLENE C ₃ H ₆	42.078							
19	PROPANE C ₃ H ₈	44.094	7.7314	7.7314	4.7371	4.7371			
20	I-BUTANE C ₄ H ₁₀	58.120	0.8394	0.8394	0.3942	0.3942			
21	n-BUTANE C ₄ H ₁₀	58.120	1.8594	1.8594	0.8130	0.8130			
22	I-PENTANE C ₅ H ₁₂	72.146	0.6968	0.6968	0.3066	0.3066			
23	n-PENTANE C ₅ H ₁₂	72.146	0.3774	0.3774	0.1450	0.1450			
24	n-HEXANE C ₆ H ₁₄	86.180	0.6549	0.6549	0.2224	0.2224			
25	n-HEPTANE C ₇ H ₁₆	100.20	0.1956	0.1956	0.0542	0.0542			
26	n-OCTANE C ₈ H ₁₈	114.23	0.0596	0.0596	0.0149	0.0149			
27	n-NONANE C ₉ H ₂₀	128.26	0.0297	0.0297	0.0071	0.0071			
28	n-DECANE C ₁₀ H ₂₂	142.28	0.0099	0.0099	0.0000	0.0000			
29	AMMONIA NH ₃	17.031							
30	HYDRO. CHLOR. HCl	36.461							
31	CHLORINE Cl ₂	70.914							
32	CHLORIDES - TRACES								
33	■ CALCULATED MOL WT.		24.52	24.52	21.56	21.56			
34	□ C _p /C _v (K) @ 65° OR °C								
36	NOTE: IF WATER VAPOR AND/OR CHLORIDES ARE PRESENT, EVEN MINUTE TRACES, IN THE GAS BEING COMPRESSED, IT MUST BE INCLUDED ABOVE.								
37									
38	● SITE/LOCATION CONDITIONS								
39	ELEVATION	12.5 m	0.99 AFC	AMBIENT TEMPS: MAX		50 °C	MIN	5 °C	
40	○ MIN DESIGN METAL TEMP		°C (6.15.8.1)		RELATIVE HUMIDITY: MAX 100 % MIN 0 %				
41	COMPRESSOR LOCATION:	○ INDOOR ○ HEATED ○ UNHEATED ○		AT GRADE LEVEL ○ ELEVATED: _____ m		○ PARTIAL SIDES ○ PLATFORM: ○ ON-SHORE			
42	● OUTDOOR ○ NO ROOF ● UNDER ROOF		○ TROPICALIZATION REQ.						
43	○ OFF-SHORE ○ WEATHER PROTECTION REQ.								
44	○ WINTERIZATION REQUIRED								
45	UNUSUAL CONDITIONS:	● CORROSIVES ○ DUST ○ FUMES ○ OTHER							
46									
47	ELECTRICAL CLASSIFICATIONS								
48	HAZARDOUS								
49	MAIN UNIT	● ZONE	2	GROUP	GR.IIB	TEMP CLASS			
50	L.O. CONSOLE	● ZONE	2	GROUP	GR.IIB	TEMP CLASS			
51	CW CONSOLE	● ZONE	2	GROUP	GR.IIB	TEMP CLASS			
52									
53									

Note 7 to be added. T4 class and IP 65 for outdoor instrumentation is requested

Reply: according to TCL(safety no.2) electrical should be classified as ZONE2 CLASS IIB T3

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شماره پیمان: 053 - 073 - 9184	DETAILED D/SH FOR COMPRESSOR (API-618) WITH CERTIFICATES	شماره صفحه: 5 از 23
	نسخه سریال نوع مدرک رشته تسهیلات صادر کننده بسته کاری پروژه V01 0001 DS ME 120 HY GCS BK	

1	PART LOAD OPERATING CONDITIONS							
2	CAPACITY CONTROL	BY:	☐ MFG'S CAP. CONTROL ☐ PURCHASERS BY-PASS ☒ BOTH ☐ OTHER _____					
4		FOR:	☐ PART LOAD COND. ☐ START-UP ONLY ☒ BOTH					
5		WITH:	☒ AUTO LOADING DELAY INTERLOCK (7.6.2.4) ☐ AUTO IMMEDIATE UNLOADING					
6		USING:	☒ FIXED VOLUME PCK. ☒ SUCTION VALVE UNLOADERS: ☒ FINGER ☐ PLUG ☐ OTHER _____					
7	ACTION: ☐ DIRECT (AIR-TO-UNLOAD) ☒ REVERSE (AIR-TO-LOAD/FAIL SAFE)						V03	
8	NUMBER OF STEPS: ☐ ONE ☐ THREE ☒ FIVE ☐ OTHER _____							
10	☐ RAIN COVER REQUIRED OVER UNLOADERS							
11	ALL UNLOADING STEPS BASIS MANUFACTURERS CAPACITY SHOWN ON PAGE 3.							
12	INLET AND DISCHARGE PRESSURE ARE		☒ AT CYLINDER FLANGES ☐ PULSATION SUPPRESSOR					
13	● SERVICE OR ITEM NO.		Continuous					
14	■ STAGE		1st					
15	■ NORMAL OR ALTERNATE CONDITION		Summer					
16	● PERCENT CAPACITY		0	25	50	75	100	
17	● WEIGHT FLOW, kg/h						8935.5	
18	■ Nm ³ /h (1.013 bar & 0°C)						8162.9	
19	POCKETS/VALVES OPERATION *							
20	■ POCKET CLEARANCE ADDED %		25% (Head Side)					
21	■ TYPE UNLOADERS, PLUG/FINGER		Finger	Finger	Finger	Finger	Finger	
22	■ INLET TEMPERATURE, °C		36.8	36.8	36.8	36.8	36.8	
23	■ INLET PRESSURE, barg		4.80	4.80	4.80	4.80	4.80	
24	■ DISCHARGE PRESSURE, barg		18.25	18.25	18.25	18.25	18.25	
25	□ DISCHARGE TEMP., ADIABATIC °C							
26	■ DISCHARGE TEMP., PREDICTED °C							129.0000
27	■ VOLUMETRIC EFF., %HE/%CE		- / -	36.235 / -	72.47 / 72.47	36.235 / 72.47	72.47 / 72.47	/
28	■ CALC. GAS ROD LOAD, kN, C **							
29	■ CALC. GAS ROD LOAD, kN, T **							
30	◆ COMB. ROD LOAD, kN C (GAS & INERTIA)							24453
31	◆ COMB. ROD LOAD, kN T (GAS & INERTIA)							22951
32	◆ ROD REV., DEGREES MIN @ X-HD PIN ***							
33	■ KW/STAGE							441.1
34	■ TOTAL KW @ COMPRESSOR SHAFT							
35	■ TOTAL KW INCL. V-BELT & GEAR LOSSES							
36								
37	* SHOW OPERATION WITH THE FOLLOWING SYMBOLS:							
38	APR.202		HEAD END	= HE		AFC		SUCTION VALVE(S) UNLOADED = S
39			OR	= CE	}	PLUS	}	OR
40			CRANK END	= CE	}	PLUS	}	FIXED POCKET OPEN = F
41								OR
42								VARIABLE POCKET OPEN = V
43								
44	EXAMPLE: HE-F/CE-S = HEAD END FIXED POCKET OPEN / CRANK END SUCTION VALVE(S) UNLOADED.							
45	* C = COMPRESSION T = TENSION *** X - HD = CROSSHEAD							
46	□ MINIMUM PRESSURE REQUIRED TO OPERATE CYLINDER UNLOADING DEVICES, _____ barg							
47	CYLINDER UNLOADING MEDIUM: ☒ AIR ☐ NITROGEN ☐ OTHER _____							
48	● PRESSURE AVAILABLE FOR CYLINDER UNLOADING DEVICES, MAX/MIN _____ / _____ barg							
50	REMARKS, SPECIAL REQUIREMENTS, AND/OR SKETCH							
51								
52								
53								
54								

Spill back valve (note 8) to be added
HY: NOTED

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	نسخه سریال نوع مدرک رشته تسهیلات صادر کننده بسته کاری پروژه V01 0001 DS ME 120 HY GCS BK	

PART LOAD OPERATING CONDITIONS																																																																																																											
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NISOC

نگهداشت و افزایش تولید میدان نفتی بینک

سطح الارض و ابنیه تحت الارض/بسته ایستگاه تقویت فشار گاز

خرید پکیج های کمپرسور گاز (رفت و برگشتی) بینک

قرارداد (BK-HD-GCS-CO-0008_03)



HAVAYAR
INDUSTRIAL GROUP

شماره پیمان:

053 - 073 - 9184

DETAILED D/SH FOR COMPRESSOR (API-618) WITH CERTIFICATES

نسخه	سریال	نوع مدرک	رشته	تسهیلات	صادر کننده	بسته کاری	پروژه
V01	0001	DS	ME	120	HY	GCS	BK

شماره صفحه : 7 از 23

1 PART LOAD OPERATING CONDITIONS

2 CAPACITY CONTROL BY: ☐ MFG'S CAP. CONTROL ☐ PURCHASERS BY-PASS ☒ BOTH ☐ OTHER _____

4 FOR: ☐ PART LOAD COND. ☐ START-UP ONLY ☒ BOTH

5 WITH: ☒ AUTO LOADING DELAY INTERLOCK (7.6.2.4) ☐ AUTO IMMEDIATE UNLOADING

6 USING: ☐ FIXED VOLUME POCK. ☒ SUCTION VALVE UNLOADERS: ☒ FINGER ☐ PLUG ☐ OTHER

7 ACTION: ☐ DIRECT (AIR-TO-UNLOAD) ☒ REVERSE (AIR-TO-LOAD/FAIL SAFE)

8 NUMBER OF STEPS: ☐ ONE ☐ THREE ☒ FIVE ☐ OTHER _____

10 ☐ RAIN COVER REQUIRED OVER UNLOADERS

11 ALL UNLOADING STEPS BASIS MANUFACTURERS CAPACITY SHOWN ON PAGE 3.

12 INLET AND DISCHARGE PRESSURE ARE ☒ AT CYLINDER FLANGES ☐ PULSATION SUPPRESSOR FLANGES

13 ☒ SERVICE OR ITEM NO. 14 ☒ STAGE 15 ☒ NORMAL OR ALTERNATE CONDITION 16 ☒ PERCENT CAPACITY 17 ☒ WEIGHT FLOW, kg/h 18 ☐ Nm3/h (1.013 bar & 0°C) 19 ☒ POCKETS/VALVES OPERATION * 20 ☒ POCKET CLEARANCE ADDED % 21 ☒ TYPE UNLOADERS, PLUG/FINGER 22 ☒ INLET TEMPERATURE, °C 23 ☒ INLET PRESSURE, barg 24 ☒ DISCHARGE PRESSURE, barg 25 ☐ DISCHARGE TEMP., ADIABATIC °C 26 ☒ DISCHARGE TEMP., PREDICTED °C 27 ☒ VOLUMETRIC EFF., %HE/%CE 28 ☒ CALC. GAS ROD LOAD, KN, C ** 29 ☒ CALC. GAS ROD LOAD, KN, T ** 30 ☒ COMB. ROD LOAD, KN C (GAS & INERTIA) 31 ☒ COMB. ROD LOAD, KN T (GAS & INERTIA) 32 ☒ ROD REV., DEGREES MIN @ X-HD PIN *** 33 ☒ KW/STAGE 34 ☒ TOTAL KW @ COMPRESSOR SHAFT 35 ☒ TOTAL KW INCL. V-BELT & GEAR LOSSES	Continuous 1st Winter <table> <tr> <td>0</td> <td>25</td> <td>50</td> <td>75</td> <td>100</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td>8343.5</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td>8668.6</td> </tr> <tr> <td>HE S & CE S</td> <td>HE F & CE S</td> <td>HE S or CE S</td> <td>HE F</td> <td>-</td> </tr> <tr> <td></td> <td>25% (Head Side)</td> <td></td> <td>25% (Head Side)</td> <td></td> </tr> <tr> <td>Finger</td> <td>Finger</td> <td>Finger</td> <td>Finger</td> <td>Finger</td> </tr> <tr> <td>18.9</td> <td>18.9</td> <td>18.9</td> <td>18.9</td> <td>18.9</td> </tr> <tr> <td>4.80</td> <td>4.80</td> <td>4.80</td> <td>4.80</td> <td>4.80</td> </tr> <tr> <td>18.25</td> <td>18.25</td> <td>18.25</td> <td>18.25</td> <td>18.25</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td>116.0000</td> </tr> <tr> <td>- / -</td> <td>36.235 / -</td> <td>72.47/- / 72.47/-</td> <td>36.235 / 72.47</td> <td>72.47 / 72.47</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td>435.2</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </table>					0	25	50	75	100					8343.5					8668.6	HE S & CE S	HE F & CE S	HE S or CE S	HE F	-		25% (Head Side)		25% (Head Side)		Finger	Finger	Finger	Finger	Finger	18.9	18.9	18.9	18.9	18.9	4.80	4.80	4.80	4.80	4.80	18.25	18.25	18.25	18.25	18.25					116.0000	- / -	36.235 / -	72.47/- / 72.47/-	36.235 / 72.47	72.47 / 72.47															435.2										
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37 * SHOW OPERATION WITH THE FOLLOWING SYMBOLS:

APR.202	HEAD END	= HE	} PLUS	SUCTION VALVE(S) UNLOADED	= S
	OR			OR	
	CRANK END	= CE		FIXED POCKET OPEN	= F
			}	OR	
				VARIABLE POCKET OPEN	= V

44 EXAMPLE: HE-F/CE-S = HEAD END FIXED POCKET OPEN / CRANK END SUCTION VALVE(S) UNLOADED.

45 * C = COMPRESSION T = TENSION *** X - HD = CROSSHEAD

46 ☐ MINIMUM PRESSURE REQUIRED TO OPERATE CYLINDER UNLOADING DEVICES, _____ barg

47 CYLINDER UNLOADING MEDIUM: ☒ AIR ☐ NITROGEN ☐ OTHER _____

48 ☒ PRESSURE AVAILABLE FOR CYLINDER UNLOADING DEVICES, MAX/MIN _____ / _____ barg

50 REMARKS, SPECIAL REQUIREMENTS, AND/OR SKETCH

51

52

53

54

		نگهداشت و افزایش تولید میدان نفتی بینک سطح الارض و ابنیه تحت الارض/ بسته ایستگاه تقویت فشار گاز خرید پکیج های کمپرسور گاز (رفت و برگشتی) بینک قرارداد (BK-HD-GCS-CO-0008_03)							
شماره پیمان: 053 - 073 - 9184		DETAILED D/SH FOR COMPRESSOR (API-618) WITH CERTIFICATES				شماره صفحه : 8 از 23			
		BK	GCS	HY	120	ME	DS	0001	V01

PART LOAD OPERATING CONDITIONS									
1									
2	CAPACITY CONTROL	BY:	☐ MFG'S CAP. CONTROL ☐ PURCHASERS BY-PASS ☒ BOTH ☐ OTHER _____						
4		FOR:	☐ PART LOAD COND. ☐ START-UP ONLY ☒ BOTH						
5		WITH:	☒ AUTO LOADING DELAY INTERLOCK (7.6.2.4) ☐ AUTO IMMEDIATE UNLOADING						
6		USING:	☒ FIXED VOLUME POCK. ☒ SUCTION VALVE UNLOADERS: ☒ FINGER ☐ PLUG ☐ OTHER						
7			ACTION: ☐ DIRECT (AIR-TO-UNLOAD) ☒ REVERSE (AIR-TO-LOAD/FAIL SAFE)						
8			NUMBER OF STEPS: ☐ ONE ☐ THREE ☒ FIVE ☐ OTHER _____						
10			☐ RAIN COVER REQUIRED OVER UNLOADERS						
11	ALL UNLOADING STEPS BASIS MANUFACTURERS CAPACITY SHOWN ON PAGE 3.								
12	INLET AND DISCHARGE PRESSURE ARE ☒ AT CYLINDER FLANGES ☐ PULSATION SUPPRESSOR FLANGES								
13	☒ SERVICE OR ITEM NO.		Continuous						
14	☒ STAGE		2nd						
15	☒ NORMAL OR ALTERNATE CONDITION		Winter						
16	☒ PERCENT CAPACITY		0	25	50	75	100		
17	☒ WEIGHT FLOW, kg/h						8343.5		
18	☐ Nm3/h (1.013 bar & 0°C)						8668.6		
19	☐ POCKETS/VALVES OPERATION *		HE S & CE S	HE F & CE S	HE S or CE S	HE F	-		
20	☐ POCKET CLEARANCE ADDED %		25% (Head Side)		25% (Head Side)				
21	☐ TYPE UNLOADERS, PLUG/FINGER		Finger	Finger	Finger	Finger	Finger		
22	☐ INLET TEMPERATURE, °C		59.9	59.9	59.9	59.9	59.9		
23	☐ INLET PRESSURE, barg		17.40	17.40	17.40	17.40	17.40		
24	☐ DISCHARGE PRESSURE, barg		54.90	54.90	54.90	54.90	54.90		
25	☐ DISCHARGE TEMP., ADIABATIC °C								
26	☐ DISCHARGE TEMP., PREDICTED °C		150.0000						
27	☐ VOLUMETRIC EFF., %HE/%CE		- / -	37.29 / -	74.58/- / 74.58/-	37.29 / 74.58	74.58 / 74.58	/	
28	☐ CALC. GAS ROD LOAD, kN, C **								
29	☐ CALC. GAS ROD LOAD, kN, T **								
30	☒ COMB. ROD LOAD, kN C (GAS & INERTIA)								
31	☒ COMB. ROD LOAD, kN T (GAS & INERTIA)								
32	☒ ROD REV., DEGREES MIN @ X-HD PIN ***								
33	☐ KW/STAGE		468.5						
34	☐ TOTAL KW @ COMPRESSOR SHAFT								
35	☐ TOTAL KW INCL. V-BELT & GEAR LOSSES								
36									
37	* SHOW OPERATION WITH THE FOLLOWING SYMBOLS:								
38					SUCTION VALVE(S) UNLOADED = S				
39	APR.202	HEAD END	= HE		AFC	OR			
40		OR	= CE	}	PLUS	FIXED POCKET OPEN = F			
41		CRANK END	= CE	}		OR			
42				}		VARIABLE POCKET OPEN = V			
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44	EXAMPLE: HE-F/CE-S = HEAD END FIXED POCKET OPEN / CRANK END SUCTION VALVE(S) UNLOADED.								
45	* C = COMPRESSION T = TENSION *** X - HD = CROSSHEAD								
46	☐ MINIMUM PRESSURE REQUIRED TO OPERATE CYLINDER UNLOADING DEVICES, _____ barg								
47	CYLINDER UNLOADING MEDIUM: ☒ AIR ☐ NITROGEN ☐ OTHER _____								
48	☒ PRESSURE AVAILABLE FOR CYLINDER UNLOADING DEVICES, MAX/MIN _____ / _____ barg								
50	REMARKS, SPECIAL REQUIREMENTS, AND/OR SKETCH								
51									
52									
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54									

 NISOC	نگهداشت و افزایش تولید میدان نفتی بینک سطح الارض و اینیه تحت الارض/ بسته ایستگاه تقویت فشار گاز خرید پکیج های کمپرسور گاز (رفت و برگشتی) بینک قرارداد (BK-HD-GCS-CO-0008_03)	 HAVAYAR INDUSTRIAL GROUP
شماره پیمان: 053 - 073 - 9184	DETAILED D/SH FOR COMPRESSOR (API-618) WITH CERTIFICATES	شماره صفحه: 9 از 23
	نسخه سریال نوع مدرک رشته تسهیلات صادرکننده بسته کاری پروژه V01 0001 DS ME 120 HY GCS BK	

1	● SCOPE OF BASIC SUPPLY		
2	PURCHASER TO FILL IN (☐ ☐ ☐) AFTER COMMODITY TO INDICATE: ☐ BY COMPR. MFR. ☐ BY PURCH. ☐ BY OTHERS		
3	● DRIVER (☒ ☐ ☐):	☐ VARIABLE SPEED SPEED RANGE _____ r/min TO _____ r/min ☒ INDUCTION MOTOR ☐ SYNCHRONOUS MOTOR ☐ STEAM TURBINE ☐ ENGINE ☐ OTHER _____ ☐ API 541 ☐ API 546 ☐ API 611 ☐ API 612 ☐ OUTBOARD BEARING ☐ PROVISION FOR DRY AIR PURGE FOR OUTBOARD BEARING.	
4			
5			
6			
7	☐ SLIDE BASE FOR DRIVER (☐ ☐ ☐) ☐ SOLE PLATE FOR DRIVER (☐ ☐ ☐) ☐ MOTOR STARTING EQUIPMENT (☐ ☐ ☐); DEFINE _____		
8			
9	☐ GEAR (☐ ☐ ☐):	☐ BASEPLATE FOR GEAR ☐ API 613 ☐ API 677 ☒ COUPLING(S) (☒ ☐ ☐):	☒ LOW SPD. ☐ HI-SPD. ☐ QUILL SHAFT ☐ KEY-LESS DRV. ☐ KEY'D DRV. ☐ OTHER _____ ☐ API 671
10			
11			
12	☐ V-BELT DRIVE (☐ ☐ ☐):	☐ SHEAVES & V-BELTS (☐ ☐ ☐) ☐ STATIC CONDUCTING V-BELTS ☐ BANDED V-BELTS ☒ DRIVE GUARD(S) (☒ ☐ ☐):	☐ MANUFACTURER'S STD. ☒ NON-SPARKING ☐ CALIF CODE ☒ API 671, ANNEX G ☐ OTHER _____
13			
14			
16	● PULSATION SUPPRESSORS (☒ ☐ ☐):	● INITIAL INLET & FINAL DISCHARGE ● SUPPORTS (☒ ☐ ☐) ● INTERSTAGE ● SUPPORTS ☐ SUPPRESSOR(S) TO HAVE MOISTURE REMOVAL SECTION: ● ACOUSTICAL SIMUL. STUDY (☒ ☐ ☐): DESIGN APPROACH CHECK ONLY ONE, SEE 7.9.4.1.1, TABLE 6)	
17			
18			
19			
20			
21			
22	STUDY TO CONSIDER: ALL SPECIFIED LOAD COND., INCL. ● SINGLE ACT., PLUS ☐ CRITICAL FLOW MEASUREMENT (7.9.4.2.5.3.3) ☐ PULSATION SUPPRESS'N DEVICE LOW CYCLE FATIGUE ANALYSIS ● VENDOR REVIEW OF PURCHASER'S PIPING ARRANGEMENT NOTE: SEE APPENDIX N FOR INFORMATION REQUIRED FOR STUDY		
23			
24			
25			
26			
27			
28	PACKAGED: ☐ NO ☐ YES (☐ ☐ ☐) DEFINE BASIC SCOPE OF PACKAGING IN REMARKS SECTION, PAGE 5 ☐ DIRECT GROUTED ☐ CEMENTED/MORTAR GROUT ☐ EPOXY GROUT; MFG/TYPE _____ / _____ ☐ RAILS ☐ CHOCK BLOCKS ☐ SHIMS ☐ BASEPLT. ☐ SKID ☐ SOLEPLT. ☐ BOLTS OR STUDS FOR SOLEPLT. TO FRAME ☐ SUITABLE FOR COLUMN MOUNTING (UNDER SKID AND/OR BASEPLATE) ☐ LEVELING SCREWS ☐ NON-SKID DECKING ☐ SUB SOLEPLATES ● INTERCLR(S) (☐ ☒ ☐) ● OFF MOUNTED ☐ MACHINE MTD. ● AFTERCLR(S) (☐ ☒ ☐) ● SEPARATOR(S) (☐ ☒ ☐) ☐ CONDENSATE SEPARATION & COLLECTION FACILITY SYSTEM (7.8.2.1) ☐ INTERSTAGE PIP. (☐ ☐ ☐): ☐ FINAL DISC. PIP. (☐ ☐ ☐): ☐ PARTIAL PRE FAB, FIELD FIT ☐ SHOP FITTED FLANGE FINISH ☐ API 618 FLANGE FINISH > 125 < 250 (7.9.5.1.16) ● FLANGE FINISH PER ANSI 16.5 ☐ SPECIAL FINISH ☐ SPECIAL PIPING REQUIREMENTS (7.7.1.13). (DEFINE IN REMARKS SECTION NEXT PAGE) ☐ INITIAL INLET, ☐ INTERSTAGE SUCTION PIPING ARR'D FOR: ● INSULATION (☒ ☐ ☐) ● HEAT TRACING (☒ ☐ ☐) ● INLET STRAINER APR.2023 ☒ ☐ ☐): ● INIT AFC ☐ SIDESTREAM INLET ● SPOOL PIECE FOR INLET STRAINERS ☐ MANIFOLD PIPING; ☐ DRAINS ☐ VENTS ☐ RELIEF VALVES ☐ AIR/GAS SUPPLY ● RELIEF VALVE(S) (☐ ☒ ☐): ☐ INITIAL INLET ● INTERSTAGE ● FINAL DISCHARGE ☐ RUPTURE DISC(S) (☐ ☐ ☐) ☐ THRU STUDS IN PIPING FLANGES ☐ FOR ATMOSPHERIC INLET AIR COMPR. ONLY: ☐ INLET AIR FILTER (☐ ☐ ☐) ☐ INLET FILTER -SILENCER (☐ ☐ ☐) ● PREFERRED TYPE OF CYLINDER COOLING (☒ ☐ ☐): ● FORCED ☐ THERMOSYPHON _____ STAGE CYL'(S) ☐ STATIC (STAND-PIPE) _____ STAGE CYL'(S) NOTE: MANUFACTURER SHALL RECOMMEND BEST TYPE OF COOLING AFTER FINAL ENGINEERING REVIEW OF ALL OPERATING CONDITIONS ● CYL. COOLANT PIPING BY (☒ ☐ ☐) ☐ MATCH M'RKED ● SINGLE INLET/OUTLET MANIFOLD & VALVES ● SIGHT GL'SS(ES) ● INDIVIDUAL INLET/ OUTLET PER CYL. ● VALVE(S) ● CLOSED SYSTEM WITH PUMP, COOLER, SURGE TANK, & PIPING		
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needs to be rechecked.
 it is not the same as
 project data sheet.
 HY: Noted, will be
 checked.



 NISOC	نگهداشت و افزایش تولید میدان نفتی بینک سطح الارض و ابنیه تحت الارض/بسته ایستگاه تقویت فشار گاز خرید پکیج های کمپرسور گاز (رفت و برگشتی) بینک قرارداد (BK-HD-GCS-CO-0008_03)	 HAVAYAR INDUSTRIAL GROUP																
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نسخه	سریال	نوع مدرک	رشته	تسهیلات	صادرکننده	بسته کاری	پروژه											
V01	0001	DS	ME	120	HY	GCS	BK											
1 SCOPE OF BASIC SUPPLY (Con't) 2 ● SEPARATE COOLING CONSOLE (☒ ☐ ☐): ● ONE FOR EA. TAG ☐ ONE CMN TO ALL UNITS ● DUAL PUMPS (AUX. & MAIN) 3 ● ARRANGED FOR HEATING JACKET WATER AS WELL AS COOLING ☐ SHOP RUN 4 ● ROD PRESS. PACKING COOLING SYSTEM (☐ ☐ ☐): ☐ SEPARATE CONSOLE ● COMBINE WITH JKT SYSTEM ☐ FILTERS 5 ● FRAME LUBE OIL SYSTEM (☒ ☐ ☐): ● AUX. PUMP ● DUAL FILTERS WITH TRANSFER VALVE ● SHOP RUN 6 ☐ CONTINUOUS FLOW IN SENSING LINE TO PRESSURE SWITCHES 7 ● SEPARATE LUBE OIL CONSOLE (☒ ☐ ☐): ☐ EXTENDED TO MOTOR OUTBOARD BEARING ● SHOP RUN 8 NOTE: PIPING BETWEEN ALL CONSOLES AND COMPRESSOR UNIT BY PURCHASER 9 ● CAPACITY CONTROL (☒ ☐ ☐): ● SEE DATA SHEET PAGE 3 FOR DETAILS ● IN INSTRUMENT & CONTROL PANEL 10 ☐ SEPARATE MACHINE MOUNTED PANEL 11 ● PNEUMATIC ☐ ELECTRIC ☐ ELECTRONIC 12 ● PROGRAMMABLE CONTROLLER 13 ● INSTRUMENT & CONTROL PANEL (☒ ☐ ☐): ● ONE FOR EACH UNIT ● FREE STANDING (OFF UNIT) 14 ☐ MACHINE MOUNTED 15 ☐ BUFFER GAS CONTROL PANEL (☐ ☐ ☐): ☐ ONE FOR EACH UNIT ☐ ONE COMMON TO ALL UNITS 16 ☐ MACHINE MOUNTED ☐ FREE STANDING (OFF UNIT) 17 SEE INSTRUMENTATION DATA SHEETS FOR DETAILS OF PANEL, ADDITIONAL REMARKS, AND INSTRUMENTATION. 18 NOTE: ALL TUBING, WIRING, & CONNECTIONS BETWEEN OFF-UNIT FREE STANDING PANELS AND COMPRESSOR UNIT BY 19 PURCHASER. 20 21 ● HEATERS (☒ ☐ ☐): ● FRAME LUBE OIL ● CYL. LUBRICATORS ● COOLING WATER ☐ DRIVER(S) ☐ GEAR OIL 22 ● ELECTRIC ☐ STEAM 23 24 ● BARRING DEVICE (☒ ☐ ☐): ☐ MANUAL ☐ PNEUMATIC ● ELECTRIC ☐ FLYWHEEL LOCKING DEVICE (☐ ☐ ☐) 25 ☐ CRANKCASE RAPID PRESSURE RELIEF DEVICE(S) (☐ ☐ ☐) 26 ● SPECIAL CORROSION PROTECTION: ☐ NO ● YES ☐ MFR'S STANDARD ● OTHER NACE MR0175 for wetted pipes 27 ☐ HYDRAULIC TENSIONING TOOLS ☐ NO ☐ YES 28 ● MECHANICAL RUN TEST: ☐ NO ● YES ☐ MFG'S STANDARD ● OTHER MFR. Procedure (Approved by Purchaser) 29 ☐ COMPLETE SHOP RUN TEST OF ALL MACHINE MOUNTED EQUIPMENT, PIPING & APPURT.(S) 30 31 PAINTING: ● MANUFACTURER'S STANDARD ● SPECIAL AS PER: BK-GNRL-PEDCO-000-PI-SP-0006 32 NAMEPLATES: ☐ U.S. CUSTOMARY UNITS ● SI UNITS 33 SHIPMENT: ● DOMESTIC ☐ EXPORT ☐ EXPORT BOXING REQUIRED (☐ ☐ ☐) 34 ● STANDARD 6 MONTH STORAGE PREPARATION (☐ ☐ ☐), PER SPEC 35 ● OUTDOOR STORAGE FOR OVER 6 MONTHS (☐ ☐ ☐), PER SPEC MFG's Procedure shall be followed 36 ☐ INITIAL INSTALLATION AND OPERATING TEMP ALIGNMENT CHECK AT JOBSITE BY VENDOR REPRESENTATIVE 37 ☐ COMPRESSOR MANUFACTURER'S USER'S LIST FOR SIMILAR SERVICE 38 ● COMPRESSOR VALVE DYNAMIC RESPONSE 39 ● PERFORMANCE APR.2023 ● BHP VS. SUCTION PRESSURE CURVES 40 ● ROD LOAD/GAS LOAD CHARTS 41 ☐ VALVE FAILURE DATA CHARTED 42 ● SPEED/TORQUE CURVE DATA 43 ● BkW VS. CAPACITY PERFORMANCE CURVES OR TABLES REQUIRED FOR UNLOADING STEPS AND/OR VARIABLE 44 SUCTION/DISCHARGE PRESSURES 45 46 REMARKS: 47 48 49 50 51	Train HY reply: this is API format and vendor could not change it																	

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شماره پیمان: 053 - 073 - 9184	DETAILED D/SH FOR COMPRESSOR (API-618) WITH CERTIFICATES	شماره صفحه : 11 از 23
	نسخه سریال نوع مدرک رشته تسهیلات صادرکننده بسته کاری پروژه V01 0001 DS ME 120 HY GCS BK	

1	UTILITY CONDITIONS										
2	ELECTRICAL POWER:		AC VOLTS	/	PHASE	/	HERTZ	DC VOLTS			
3	● MAIN DRIVER		1100	/	3	/	50		INSTRUMENT		
4	● AUXILIARY MOTORS		400	/	3	/	50		ALARM & SHUTDOWN		
5	● HEATERS		230	/	1	/	50				
6											
7											
8	INSTRUMENT AIR:		NORMAL PRESSURE				4	/	8.5	barg	
9	NITROGEN:		NORMAL PRESSURE					/		barg	
10											
11	STEAM FOR DRIVERS					HEATERS					
12	INLET: PRESS	barg	MAX/MIN			INLET: PRESS	barg	MAX/MIN			
13	(NORM.) TEMP	°C	MAX/MIN			(NORM.) TEMP	°C	MAX/MIN			
14	EXHST: PRESS	barg	MAX/MIN			EXHST: PRESS	barg	MAX/MIN			
15	(NORM.) TEMP	°C	MAX/MIN			(NORM.) TEMP	°C	MAX/MIN			
16											
17											
18	COOLING WATER FOR COMPRESSOR CYLINDERS					COOLERS					
19	TYPE WATER					TYPE WATER					
20	SUPP.: PRESS	3	barg	MAX/MIN		SUPP.: PRESS	barg	MAX/MIN			
21	(NORM.) TEMP	58	°C	MAX/MIN		(NORM.) TEMP	°C	MAX/MIN			
22	RTRN: PRESS	barg	MAX/MIN			RTRN: PRESS	barg	MAX/MIN			
23	(NORM.) TEMP	65	°C	MAX/MIN		(NORM.) TEMP	°C	MAX/MIN			
24											
25	COOLING FOR ROD PACKING:										
26	TYPE FLUID	GLYCOL H2O	SUPPLY PRESSURE	3	barg @	58	°C	RETURN	barg @	65	°C
27											
28	FUEL GAS:	NORMAL PRESSURE	barg	MAX/MIN		FUEL GAS:	NORMAL PRESSURE	barg	MAX/MIN		
29	COMPOSITION										
30											
31	REMARKS/SPECIAL REQUIREMENTS:										
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شماره پیمان: 053 - 073 – 9184	DETAILED D/SH FOR COMPRESSOR (API-618) WITH CERTIFICATES							شماره صفحه : 12 از 23
	پروژه	بسته کاری	صادرکننده	تسهیلات	رشته	نوع مدرک	سریال	
	BK	GCS	HY	120	ME	DS	0001	
☒ CYLINDER DATA AT FULL LOAD CONDITION								
SERVICE/ITEM NO.		Sour Gas						
STAGE		1st		2nd				
INLET PRESSURE, barg		4.8		17.4				
DISCHARGE PRESSURE, barg		18.25		54.9				
CYLINDERS PER STAGE		1		1				
SINGLE OR DOUBLE ACTING (SA OR DA)		DA		DA				
BORE, mm		475		280				
STROKE, mm		250		250				
RPM:		420						
PISTON SPEED, m/s:		3.5		4				
CYLINDER LINER, YES/NO		Yes		Yes				
LINER NOMINAL THICKNESS, mm		15		12.5				
PISTON DISPLACEMENT, m ³ /h		2192.71		735.77				
CYLINDER DESIGN CLEARANCE, % AVERAGE								
VOLUMETRIC EFFICIENCY, % AVERAGE		72.47		74.58				
VALVES, INLET/DISCHARGE, QTY PER CYL.		4 / 4		4 / 4				
TYPE OF VALVES		Plate		Plate				
VALVE LIFT, INLET/DISCHARGE, mm		/		/				
VALVE VELOCITY, m/s								
SUCTION VALVE(S)								
DISCHARGE VALVE(S)								
ROD DIAMETER, mm		90		90				
MAX ALLOW. COMBINED ROD LOADING, kN, C *		24453		24630				
MAX ALLOW. COMBINED ROD LOADING, kN, T *		22951		19948				
CALCULATED GAS ROD LOAD, kN, C *								
CALCULATED GAS ROD LOAD, kN, T *								
COMBINED ROD LOAD (GAS + INERTIA), kN, C *								
COMBINED ROD LOAD (GAS + INERTIA), kN, T *								
ROD REV., DEGREES MIN @ X-HD PIN**								
RECIP WT. (PISTON, ROD, X-HD & NUTS), kg**								
MAX ALLOW. WORKING PRESSURE, barg								
MAX ALLOW. WORKING TEMPERATURE, °C								
HYDROSTATIC TEST PRESSURE, barg		36.8		91.2				
GAS LEAKAGE TEST PRESSURE, barg								
INLET FLANGE SIZE/RATING		10" / 300		6" / 600				
FACING		FF		FF				
DISCHARGE FLANGE SIZE/RATING		10" / 300		6" / 600				
APR.2023 FACING AFC		FF		FF				
DISCHARGE RELIEF VALVE SETTING DATA AT INLET PRESSURES GIVEN ABOVE:								
RECOMMENDED SETTING, barg				60.8				
GAS ROD LOAD, kN, C *								
GAS ROD LOAD, kN, T *								
COMBINED ROD LOAD, kN, C *								
COMBINED ROD LOAD, kN, T *								
ROD REVERSAL, °MIN @ X-HD PIN**								
NOTE: CALCULATED AT INLET PRESSURES								
GIVEN ABOVE & RECOMMENDED SETTING.								
○ SETTLE-OUT GAS PRESSURE								
(DATA REQUIRED FOR STARTING)								
* C = COMPRESSION * T = TENSION **X-HD = CROSSHEAD								
NOTES/REMARKS:								

 NISOC	نگهداشت و افزایش تولید میدان نفتی بینک سطح الارض و ابنیه تحت الارض/بسته ایستگاه تقویت فشار گاز خرید پکیج های کمپرسور گاز (رفت و برگشتی) بینک قرارداد (BK-HD-GCS-CO-0008_03)							 HAVAYAR INDUSTRIAL GROUP																																																																																																																																																																																																																																																																																							
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42 ☒ COMPRESSOR CYLINDER ROD PACKING 43 ☐ FULL FLOATING PACKING 44 ☒ VENTED TO: ☒ FLARE @ _____ barg ☐ ATMOS. 45 ☐ SUCTION PRESSURE @ 0.8 barg 46 ☒ FORCED LUBRICATED ☐ NON-LUBE 47 ☒ WATER COOLED, _____ STAGE(S), _____ GPM REQ'D 48 ☒ OIL COOLED, _____ STAGE(S), _____ GPM REQ'D 49 ☐ WATER FILTER ☐ PROV.FUTURE WATER/OIL COOLING 50 ☐ VENT/BUFFER GAS SEAL PACKING ARR. (REF. FIG I-1) 51 ☒ CONSTANT OR ☐ VARIABLE DISPOSAL SYSTEM 52 ☐ BUFFER GAS PRESSURE, _____ barg 53 ☐ SPLASH GUARDS FOR WIPER PACKING				DISTANCE PIECE(S): ☐ TYPE A ☐ TYPE B ☒ TYPE C ☐ TYPE D COVERS: ☐ SOLID METAL ☐ SCREEN ☐ LOUVERED CYLINDER COMPARTMENT: (Outboard Distance Piece) ☒ VENTED TO Flare @ 0.8 barg ☐ PURGED AT Flare Press. + 1 barg ☐ PRESSURIZED TO _____ barg ☐ WITH RELIEF VALVE FRAME COMPARTMENT: (Inboard Distance Piece) ☒ VENTED TO ATM barg ☐ PURGED AT 0.5 ~ 1 barg ☐ PRESSURIZED TO _____ barg ☐ WITH RELIEF VALVE ☐ DISTANCE PIECE MAWP Flare Press. + 1 barg																																																																																																																																																																																																																																																																																											

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شماره پیمان: 053 - 073 - 9184		DETAILED D/SH FOR COMPRESSOR (API-618) WITH CERTIFICATES				شماره صفحه : 14 از 23			
		BK	GCS	HY	120	ME	DS	0001	V01

CONSTRUCTION FEATURES (CONTINUED)									
☐ FABRICATED CYLINDER, HEADS, & CONNECTION SKETCHES FOR DESIGN REVIEW BY PURCHASER. (6.15.5.13)					☒ BUFFER GAS PACKING ARR. REF: ANNEX I ☐ OIL WIPER PACKING PURGE FIGURES I-1, I-2 & I-3 ☒ INTERMEDIATE PARTITION PURGE INERT BUFFER PURGE GAS: ☒ N ₂ ☐ OTHER _____ ☒ VENT, DRAIN, PURGE PIPING BY MFG'R ☐ NO ☒ YES				
☒ COUPLING(S) ☒ LOW-SPEED ☐ HI-SPEED Between Compressor & Driver or Gear Between Driver & Gear BY MANUFACTURER TBD MODEL TBD TYPE TBD API-671 APPLIES ☐ YES ☐ NO					☐ V-BELT DRIVE DRIVEN SHEAVE DRIVE SHEAVE (COMPRESSOR SHAFT) (DRIVER SHAFT) RPM (EXPECTED) _____ PITCH DIA. (IN.) _____ QTY & GROOVE X-SEC. _____ POWER TRANSMITT'D _____ DRIVER NAMEPLATE HP RATING _____ CENTER DISTANCE (IN.) _____ H BELTS _____ OR (RELATIVE TO HP RATING) _____				
☒ INSPECTION AND SHOP TESTS (REF. 8.1.5)					STAGE(S)/SERVICE 2 STAGE(S)/SERVICE TYPE OF LUBE OIL: ☐ SYNTHETIC ☒ HYDROCARBON ISO VG#100 LUBRICATOR ☐ COMP. CRANKSHAFT, DIRECT DRIVE BY: ☐ CHAIN, FROM CRANKSHAFT ☒ ELECTRIC MOTOR ☒ OTHER _____ ☒ LUBRICATOR MFR MODEL As Per Vendor List TYPE LUBRICATOR: ☒ SINGLE PLUNGER PER POINT (6.14.3) ☐ DIVIDER BLOCKS _____ ☐ COMPARTMT, TOTAL QTY. _____ ☐ PLUNGERS (PUMPS), TOTAL QTY. _____ ☐ SPARE PLUNGERS, QTY. _____ ☐ SPARE COMPARTMT W/OUT PLUNGERS ☒ HEATERS: ☐ ELECTRIC W/THERM.(S) ☐ STEAM				
*SHOP INSPECTION ACTUAL RUNNING CLEARANCES AND RECORDS MFG STANDARD SHOP TESTS CYLINDER HYDROSTATIC TEST CYLINDER PNEUMATIC TEST CYLINDER HELIUM LEAK TEST CYL. JACKET WATER HYDRO TEST *MECHANICAL RUN TEST (4 HOUR) BAR-OVER TO CHECK ROD RUNOUT *LUBE OIL CONSOLE RUN/TEST (4 HOUR) *COOLING H ₂ O CONSOLE RUN/TEST RADIOGRAPHY BUTT WELDS ☒ GAS ☒ OIL ☐ FAB CYLS. MAG PARTICLE/LIQUID PENETRANT OF WELDS SPECIFY ADDITIONAL REQUIREMENTS (8.2.1.3)					☐ SUPPL. _____ ☐ TESTED _____ ☐ PS & _____ HEAT AFFECTED ZONES *NOTIFICATION TO PURCHASER OF ANY REPAIRS TO MAJOR COMPONENTS *SPECIFIC REQUIREMENTS TO BE DEFINED, FOR EXAMPLE, DISMANTLING, AUX EQUIPMENT OPERATIONAL & RUN TESTS. ANNEX K COMPLIANCE: ☐ VENDOR ☐ PURCHASER				
is not covering project data sheet. please recheck. HY Reply: as per approved ITP					inspection pan is not covering project data sheet. please recheck with contract. HY Reply: as per approved ITP				
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 NISOC		نگهداشت و افزایش تولید میدان نفتی بینک سطح الارض و اینیه تحت الارض/بسته ایستگاه تقویت فشار گاز خرید پکیج های کمپرسور گاز (رفت و برگشتی) بینک قرارداد (BK-HD-GCS-CO-0008_03)					 HAVAYAR INDUSTRIAL GROUP										
شماره پیمان: 053 - 073 - 9184		DETAILED D/SH FOR COMPRESSOR (API-618) WITH CERTIFICATES							شماره صفحه : 15 از 23								
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UTILITY CONSUMPTION						
ELECTRIC MOTORS						
FOR INDUCTION MOTORS SEE NOTE OF 7.1.2.6 AND MOTOR DATA SHEET	NAMEPLATE kW	LOCKED ROTOR AMPS	FULL LOAD STEADY STATE AMPS	MAIN DRIVER NON-STEADY STATE AMPS AT COMPRES- SOR RATED HORSEPOWER (INDUCTION MOTORS ONLY)		
MAIN DRIVER	1050	HOLD	HOLD	AMPS		
MAIN LUBE OIL PUMP	SHAFT DRIVEN	SHAFT DRIVEN	SHAFT DRIVEN	@ COMPRESSOR RATED		
AUX LUBE OIL PUMP	7.5	HOLD	HOLD	kW OF		
MAIN CYLINDER COOLANT PUMP	7.5	HOLD	HOLD	@ CURRENT PULSATIONS		
AUX CYLINDER COOLANT PUMP	7.5	HOLD	HOLD	OF %		
MAIN ROD PKG COOLANT PUMP						
AUX ROD PKG COOLANT PUMP						
CYLINDER LUBRICATOR	0.5	HOLD	HOLD			
FAN MOTOR	HOLD					
BARRING DEVICE	1.5	HOLD	HOLD			
ELECTRIC HEATERS						
	WATTS	VOLTS	HERTZ			
FRAME OIL HEATER(S)	1500	400	50			
CYLINDER COOLANT HEATER(S)	12000	230	50			
CYL. LUBRICATOR HEATER(S)	400	230	50			
MAIN DRIVER SPACE HEATER(S)						
STEAM						
	FLOW	PRESSURE	TEMPERATURE	BACK PRESSURE		
MAIN DRIVER	kg/h @	barg		°CTT TO	barg	
FRAME OIL HEATER(S)	kg/h @	barg		°CTT TO	barg	
CYL. LUB. HEATER(S)	kg/h @	barg		°CTT TO	barg	
	kg/h @	barg		°CTT TO	barg	
	kg/h @	barg		°CTT TO	barg	
COOLING WATER REQUIREMENTS						
APR.2023	FLOW m ³ /h AFC	INLET TEMP °C	OUTLET TEMP °C	INLET PRESS barg	OUTLET PRESS barg	MAX PRESS barg
CYLINDER JACKETS	15.29	58	65	3		
CYLINDER COOLANT CONSOLE						
FRAME LUBE OIL COOLER						
ROD PRESSURE PACKING*						
PACKING COOLANT CONSOLE (NOTE 1)	0.4	58	65	3		
INTERCOOLER(S)						
AFTERCOOLER						
TOTAL QUANTITY, m ³ /h	15.69					
REMARKS/SPECIAL REQUIREMENTS:						
*ROD PACKING COOLANT MAY BE OTHER THAN WATER						

 NISOC	نگهداشت و افزایش تولید میدان نفتی بینک سطح الارض و ابنیه تحت الارض/بسته ایستگاه تقویت فشار گاز خرید پکیج های کمپرسور گاز (رفت و برگشتی) بینک قرارداد (BK-HD-GCS-CO-0008_03)																																																	
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2 ☒ BASIC LUBE OIL SYSTEM FOR FRAME: 3 ☐ REF: TYPE MAIN BEARINGS: 4 ☒ PRESSURE SYSTEM: 5 ☐ SPLASH ☒ PRESSURE (FORCED) 6 ☐ TAP'RD ROLL'R ☒ PRECISION SL'VE 7 ☐ MAIN OIL PUMP DRIVEN BY: ☐ COMP. CRANKSHAFT ☐ HEATERS REQUIRED: 8 ☐ PSV FOR MAIN PUMP EXTERNAL TO CRANKCASE ☐ ELEC. W/THERMOSTAT(S) ☐ STEAM 9 ☐ AUX OIL PUMP DRIVEN BY: ☐ ELEC. MOTOR ☐ OTHER 10 ☐ HAND OPERATED PRE-LUBE PUMP FOR STARTING ☐ CHECK VALVE ON MAIN PUMP (FIG G-5) 11 ☐ CONTINUOUS OIL FLOW THROUGH SWITCH SENSING LINE (7.7.2.5) ☐ OPERATIONAL TEST & 4 HOUR MECH RUN TEST 12 ☒ SEP. CONSOLE FOR PRESS. LUBE SYS: ☐ ONE CONSOLE FOR EA. COMP. ☐ ONE CONSOLE FOR COMPRESSORS 13 Note: Instrumentation to be listed on Instrumentation Data Sheets. ☐ CONSOLE TO BE OF DECK PLATE TYPE CONSTRUCTION SUITABLE FOR MULTI-POINT SUPPORT AND GROUTING WITH GROUT & VENT HOLES. 14 ☒ ELECTRICAL CLASSIFICATION: I ZONE 2 GROUP IIB TEMP CLASS T3 ☐ NON-HAZARDOUS																																																		
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25 ☒ COOLERS: 26 ☐ SHELL & TUBE ☐ SINGLE ☐ DUAL W/TRANSFER VALVE ☐ MFG'S STD. (660) 27 ☐ REMOVABLE BUNDLE ☐ WATER COOLED ☒ AIR COOLED (API-661) 28 ☒ W/BYPASS & TEMP CONTROL VALVE: ☐ MANUAL ☐ AUTO 29 ☐ SEE SEPARATE HEAT EXCHANGER DATA SHEETS FOR DETAILS, SPECIFY % GLYCOL																																																		
30 ☒ FILTER(S) 31 ☐ SINGLE ☒ DUAL W/TRANSFER VALVE ☒ ASME CODE DESIGN ☐ ASM 32 ☐ DESIGN PRESSURE, barg ☐ Δ P CLEAN, barg ☐ 33 ☐ MICRON RATING, ☐ CARTRIDGE MATERIAL, ☐ 34 ☐ BONNET MATERIAL, ☐ CASING MATERIAL, SS 316L ☐ FURN.SPARE CARTR.,QTY																																																		
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to be rechecked.
HY: is not applicable

to be rechecked by
contract. it is 2 no. as
per project data sheet
HY reply: dual filter
already has been
considered and spare
cartridge will not be
supplied



نگهداشت و افزایش تولید میدان نفتی بینک
سطح الارض و ابنیه تحت الارض/بسته ایستگاه تقویت فشار گاز
خرید پکیج های کمپرسور گاز (رفت و برگشتی) بینک
قرارداد (BK-HD-GCS-CO-0008_03)



شماره پیمان:

053 - 073 - 9184

DETAILED D/SH FOR COMPRESSOR (API-618) WITH CERTIFICATES

نسخه سریال نوع مدرک رشته تسهیلات صادرکننده بسته کاری پروژه

BK GCS HY 120 ME DS 0001 V01

شماره صفحه: 17 از 23

COOLANT SYSTEM

- BASIC COOLING SYS. FOR:** ☒ COMPRESSOR CYL(S) ☒ ROD PACKING(S) ☐ PROCESS COOLER(S) ☐ OIL COOLER(S)
☐ HEATERS REQ'D FOR PRE-HEATING: ☐ ELEC., W/ THERMOSTAT(S) ☐ STEAM
PRESSURE FORCED CIRCULATING SYS: ☐ OPEN, PIPING BY: ☐ PURCH. ☐ MFR ☒ CLOSED, PIPING BY MFR.
MAIN ☒ ELEC. MOTOR ☐ STEAM TURBINE ☐ OTHER
AUX ☒ ELEC. MOTOR ☐ STEAM TURBINE ☐ OTHER
SEP. CONSOL ☒ ONE CONSOLE FOR EA. COMP. ☐ ONE CONSOLE FOR COMP'RS
NOTE: In ☐ CONSOLE TO BE OF DECK PLATE TYPE CONSTRUCTION SUITABLE FOR
in MULTI-POINT SUPPORT AND GROUTING WITH GROUT & VENT HOLES.
☐ ELECTRICAL CLASSIFICATION: C ZONE 2 GROUP IIB TEMP CLASS T3 ☐ NON-HAZARDOUS

to be rechecked by
contract.
HY reply: is not
applicable

BASIC SYS. REQ'MTS (NORM. COOLANT FLOW DATA)

☐ COOLANT TO BE % ETHYLENE GLYCOL SITE

	FORCED COOL'G	THERMO SYPHON	STAND PIPE	FLOW m ³ /h	PRESSURE barg	INLET TEMP °C	OUTLET TEMP °C	FLOW IND'TR
CYLINDER(S), 1st STAGE	☒	☐	☐	15.29	3	58	65	☐
CYLINDER(S), 2nd STAGE	☒	☐	☐		3	58	65	☐
CYLINDER(S), STAGE	☐	☐	☐					☐
CYLINDER(S), STAGE	☐	☐	☐					☐
CYLINDER(S), STAGE	☐	☐	☐					☐
CYLINDER(S), STAGE	☐	☐	☐					☐
PISTON ROD PACK'G TOTAL	☒			0.4	3	58	65	☐
INTERCOOLER(S) TOTAL	☐							☐
AFTERCOOLER	☐							☐
OIL COOLER(S)	☐							☐
TOTAL FLOW				15.69				

- SYS. PRESSURES:** ☐ DESIGN, barg ☐ HYDROTEST, barg ☒ RELIEF VALVE(S), SETTING barg
COOLANT RESERVOIR: ☐ SIZE, mm IN DIA X mm IN HT. ☐ CAPACITY m³
@ NORMAL OPERATING LEVEL
RESERVOIR MATERIAL ☐ INTERNAL COATING, TYPE Carbon Steel
LEVEL GAUGE ☒ LEVEL TRANSMITTER ☒ DRAIN VALVE ☒ INSPECTION & CLEAN-OUT OPENINGS
PUMPS: (CENTRIFUGAL ONLY) ☒ RAT'D FL'W ☒ PRESS. ☐ REQ'D ☒ DRIVER ☐ SPEED COUPLING MECH. SEAL
m³/h barg kW kW r/min REQ'D REQ'D
MAIN 15.69 3.5 7.5 ☐ ☐
AUXILIARY 15.69 3.5 7.5 ☐ ☐
PUMP CASING MATERIAL (Ref 6.14.2.1.5): MAIN PUMP Cast Iron AUX PUMP Cast Iron
☒ GUARD(S) REQ'D FOR COUP'G(S) ☒ MAIN PUMP ☒ AUX PUMP ☐ GUARD TYPE OR CODE
☐ AUX. PUMP CONTROL: ☐ MANUAL ☒ AUTO ☐ ON-OFF-AUTO SEL. SWITCH: ☐ BY PURCH. ☐ BY MANUFACTURER
APR.2023 AFC ☐ WIRING TO TERMINAL BOX: ☐ BY PURCH. ☐ BY MANUFACTURER

- COOLANT HEAT EXCHANGER:** ☐ SHELL & TUBE ☐ SINGLE ☐ DUAL W/TRANSFER VALVE ☐ TEMA C ☐ TEMA R (API 660)
(DATA SHEETS ATTACHED)
☒ AIR COOLED EXCHANGER
☒ W/BYPASS & TEM. CONTROL VALVE ☐ MANUAL ☐ AUTO ☐ LOUVERS FOR AIR EXCH.
☐ SEE SEPARATE COOLER DATA SHEET FOR DETAILS; SPECIFY % GLYCOL ON BOTH SIDES
OF SHELL & TUBE

SYS. COMPONENT SUPP.	MANUFACTURER	MODEL	MANUFACTURER	MODEL
MAIN PUMP	as per sub vendor list		TEMP CONTROL VALVE(S)	as per sub vendor list
AUXILIARY PUMP	as per sub vendor list		TRANSFER VALVE(S)	as per sub vendor list
MECHANICAL SEALS			PUMP COUPLING(S)	as per sub vendor list
ELECTRIC MOTORS	as per sub vendor list			
STEAM TURBINES				

 NISOC	نگهداشت و افزایش تولید میدان نفتی بینک سطح الارض و ابنیه تحت الارض/ بسته ایستگاه تقویت فشار گاز خرید پکیج های کمپرسور گاز (رفت و برگشتی) بینک قرارداد (BK-HD-GCS-CO-0008_03)																		
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نسخه	سریال	نوع مدرک	رشته	تسهیلات	صادرکننده	بسته کاری	پروژه												
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PULSATION SUPPRESSION DEVICES FOR RECIPROCATING COMPRESSORS																																						
THESE SHEETS TO BE FILLED OUT FOR EACH SERVICE AND/OR STAGE OF COMPRESSION																																						
APPLICABLE TO: ☐ PROPOSALS ☒ PURCHASE ☐ AS BUILT FOR/USER National Iranian South Oil Company (NISOC) SITE/LOCATION Binak Oil Field AMBIENT TEMPERATURE MIN/MAX 5 / 50 °C COMPRESSOR SERVICE Sour Gas NUMBER OF COMPRESSORS 3 COMPRESSOR MFG. Havayar / Kwangshin SUPPRESSOR MFG. AVL MODEL/TYPE KSOPT NOTE: ☐ Ind.Data Comp.'d Purch. ☐ By Compr/Supp.Mfg.w/Proposal ☒ By Mfg(s) after order ☐ By Mfg(s)/Purchaser as Applicable																																						
GENERAL INFORMATION APPLICABLE TO ALL SUPPRESSORS																																						
TOTAL NUMBER OF SERVICES AND/OR STAGES 1 TOTAL NUMBER OF COMPRESSOR CYL. 2 TOTAL NUMBER OF CRANKTHROWS 2 STROKE 250 r/min 420 ☐ ASME CODE STAMP ☐ GOVERNMENTAL CODES OF CODE REGULATIONS APPLY ☒ OTHER APPLICABLE PRESSURE VESSEL SPEC. OR CODE ASME sec. VIII ☐ LUBE SERVICE ☐ NON-LUBE SERV. ☐ NO OIL ALLOWED INTERNALLY DRY TYPE INTER.CORR.COATING ☐ YES ☐ NO RADIOGRAPHY (X-RAY OF WELDS): ☐ NONE ☐ SPOT ☒ 100% ☐ IMPACT TEST ☐ SPECIAL WELDING REQUIREMENTS ☒ SHOP INSPECTION ☒ WITNESS HYDROTEST ☒ OUTDOOR STORAGE OVER 6 MONTHS ☒ SPECIAL PAINT SPEC ☐ WITNESSED ☐ OBSERVED																																						
CYLINDER, GAS, OPERATING, AND SUPPRESSOR DESIGN DATA																																						
SERVICE Wet HC gas STAGE NO. 1st / 2nd ☒ COMPRESSOR MANUFACTURER'S RATED CAPACITY Kg/h 8935.5 m3/h 1589 Nm3/h 8162.9 ☒ LINE SIDE OPERATING PRESSURE INLET, 4.9 / 17.4 bar DISCHARGE 18.25 / 54.8 bar ☒ OPERATING TEMP. WITHIN SUPPRESSORS INLET, 36.8 / 59.9 °C DISCHARGE 129 / 146 °C ☒ ALLOWABLE PRESSURE DROP THROUGH SUPPRESSORS Δ P 68 / 65 mbar / 1.16 / 1.12 % Δ P 223/215 mbar / 1.16 / 1.12 %																																						
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شماره پیمان: 053 - 073 - 9184		DETAILED D/SH FOR COMPRESSOR (API-618) WITH CERTIFICATES						شماره صفحه : 19 از 23		
		BK	GCS	HY	120	ME	DS	0001	V01	

1	PULSATION SUPPRESSION DEVICES FOR RECIPROCATING COMPRESSORS		SERVICE: Sour Gas	
2	THESE SHEETS TO BE FILLED OUT FOR EACH SERVICE		STAGE NO. 1st / 2nd	
4	CONSTRUCTION REQUIREMENTS & DATA		SUPPRESSOR	
5	● SUPPRESSOR TAG NUMBER		DISCHARGE SUPPRESSOR	
6	● BASIC MATERIAL REQUIRED, CS, SS, ETC.		-D1 / C-2102-D1	
7	◆ ACTUAL MATERIAL DESIGNATION		Carbon Steel	
8	○ SPECIAL HARDNESS LIMITATIONS, Rc		/	
9	□ CORROSION ALLOWANCE, mm		/	
10	◆ WALL THICKNESS, mm		SHELL & HEADS WELDS	
11	NOM. SHELL DIA X OVERALL LGTH. (INCH/VOL.mm³)		3 mm	
12	PIPE OR ROLLED PLATE CONSTRUCTION		TBD mm/ TBD mm	
13	ACT. MAX ALLOW. WORKING PRESS. AND TEMPERATURE		TBD x TBD mm/ TBD mm³	
14	● MINIMUM DESIGN METAL TEMP (6.15.8.1)		PIPE ROLLED PLATE	
15	● INLET SUPPRESS. TO BE SAME MAWP AS DISCHARGE SUPPRESS.		24.5 / 56.9 bar @ 180 °C	
16	◆ MAX EXPECTED PRESSURE DROP (Δ P, %) LINE PRESS		○ YES ○ NO	
17	◆ WEIGHT (kg EACH)		Δ P bar/ %	
18	○ INSUL NUTS & ALLOW. FOR INSULATION REQUIRED (X)		kg	
19	◆ EXPECTED P-P PULSE @ LINE SIDE/CYL FLG, % LINE PRESS BASED ON FINAL SUPPRESSOR DESIGN		%/ %	
20	□ SUPPORTS, TYPE/QUANTITY			
22	CONNECTION REQUIREMENTS & DATA			
23	● LINE SIDE FLANGE. SIZE/RATING/FACING/TYPE		10" 300lb RF / Single 6" 600lb RF	
24	● COMP CYL FLANGE(S), QTY/SIZE/RATING/FACING/TYPE		Single 10" 300lb RF / Single 6" 600lb RF	
25	● FLANGE FINISH, ○ PER 7.9.5.1.16 ○ SPECIAL (SPECIFY) >125 <250 ● PER ANSI 16.5			
27	● INSPECTION OPENINGS REQUIRED		● YES ○ NO ● BLINDED	
28	○ SPEC. QTY. SIZE, /FLG TYPE & RATING			
29	◆ * QTY. SIZE, /FLG TYPE & RATING			
30	● VENT CONNECTIONS REQUIRED		● YES ○ NO	
31	○ SPEC. QTY. SIZE, /FLG TYPE & RATING			
32	◆ * QTY. SIZE, /FLG TYPE & RATING			
33	● DRAIN CONNECTIONS REQUIRED		● YES ○ NO	
34	○ SPEC. QTY. SIZE, /FLG TYPE & RATING			
35	◆ * QTY. SIZE, /FLG TYPE & RATING			
36	○ PRESSURE CONNECTIONS REQUIRED		● YES ○ NO	
37	○ SPEC. QTY. SIZE, /FLG TYPE & RATING			
38	◆ * QTY. SIZE, /FLG TYPE & RATING			
39	○ TEMPERATURE APR.2023 AFC		● YES ○ NO	
40	○ SPEC. QTY. SIZE, /FLG TYPE & RATING			
41	○ CYL NOZZLE ○ MAIN BODY		● YES ○ NO	
42	◆ * QTY. SIZE, /FLG TYPE & RATING			
43				
44				
45				
46				
47	OTHER DATA AND NOTES			
48	◆ COMPRESSOR MFG'S SUPP. OUTLINE OR DRAWING NO.		BK-GCS-HY-120-ME-DW-0032	
49	◆ SUPP. MFG'S OUTLINE OR DRAWING NO.		BK-GCS-HY-120-ME-DW-0032	
50	NOTES * = AS BUILT			
51				
52				



نگهداشت و افزایش تولید میدان نفتی بینک
سطح الارض و ابنیه تحت الارض/بسته ایستگاه تقویت فشار گاز
خرید پکیج های کمپرسور گاز (رفت و برگشتی) بینک
قرارداد (BK-HD-GCS-CO-0008_03)



DETAILED D/SH FOR COMPRESSOR (API-618) WITH CERTIFICATES

شماره صفحه : 20 از 23

شماره پیمان:

Train

HY reply: this is API format and vendor could not change it

نسخه سریال نوع مدرک رشته تسهیلات صادرکننده بسته کا

GCS HY 120 ME DS 0001 V01

INSTRUMENTATION

HY Reply: panel will be located in ITR

PURCHASER TO FILL IN () AFTER COMMODITY TO INDICATE: BY PURCH. BY OTHERS

INSTRUMENT & CONTROL

ONE FOR EA. UNIT ONE COMMON TO ALL UNITS

PANEL ():

MACHINE MTD FREE STANDING (OFF UNIT) LOCAL REMOTE OUTDOORS

PNEUMATIC ELEC. ELEC.

HY Reply: Noted HYDRULIC PROGRAMMABLE CONT'P

NEMA 7, CLASS

HY Reply: not applicable INTRINSICALLY

W/5 BARRIERS ()

URGED TO NFPA 496 TYPE

NEMA 4, WATERTIGHT & DI

ALARM SHUTDOWN

OTHER NEMA

CHANGE PRESS. PURGE CONN. EXTRA CUTOUTS

VIB. ISOLATORS STRIP HEATERS

ANNUNCIATOR W/FIRST-OUT INDICATION LOCATED ON CONTROL PANEL

PURCHASER'S CONN. BROUGHT OUT TO TERMINAL BOX BY VENDOR

BUFFER GAS CONTROL

ONE FOR EA. UNIT ONE COMMON TO ALL UNITS

PANEL ():

MACHINE MTD FREE STANDING (OFF UNIT) WITH STAND OUTDOORS

CLASS

GROUP DIVISION

CONSTANT PRESSURE DISPOSAL SYSTEM

VARIABLE PRESSURE DISPOSAL SYSTEM

ADDITIONAL PANEL REMARKS:

INSTRUMENTATION SUITABLE FOR: INDOORS OUTDOORS OTHER

PREFERRED INSTRUMENT SUPPLIERS, (TO BE COMPLETED BY PURCHASER), OTHERWISE MFR'S STANDARD APPLIES

PRESSURE GAUGES	MFR	As per Sub vendor List	SIZE & TYPE	See Instrument Data Sheet	MTL	See data sheet
TEMPERATURE GAUGES	MFR	As per Sub vendor List	SIZE & TYPE	See Instrument Data Sheet	MTL	See data sheet
LIQUID LEVEL GAUGES	MFR	As per Sub vendor List	TYPE	See Instrument Data Sheet	MTL	See data sheet
DIFF. PRESSURE GAUGES	MFR	As per Sub vendor List	SIZE & TYPE	See Instrument Data Sheet	MTL	See data sheet
PRESS. TRANSMITTERS	MFR	As per Sub vendor List	TYPE	See Instrument Data Sheet	MTL	See data sheet
LIQUID LEV. TRANSMITTER	MFR	As per Sub vendor List	TYPE	See Instrument Data Sheet	MTL	See data sheet
PRESSURE SWITCHES	MFR	As per Sub vendor List	TYPE	See Instrument Data Sheet	MTL	See data sheet
TEMPERATURE SWITCHES	MFR	As per Sub vendor List	TYPE	See Instrument Data Sheet	MTL	See data sheet
LIQUID LEVEL SWITCHES	MFR	As per Sub vendor List	TYPE	See Instrument Data Sheet	MTL	See data sheet
DIFF. PRESSURE SWITCHES	MFR	As per Sub vendor List	TYPE	See Instrument Data Sheet	MTL	See data sheet
CONTROL VALVES	MFR	As per Sub vendor List	TYPE	See Instrument Data Sheet	MTL	See data sheet
PRESSURE SAFETY VALVES	MFR	As per Sub vendor List	TYPE	See Instrument Data Sheet	MTL	See data sheet
SIGHT FLOW INDICATORS	MFR	As per Sub vendor List	TYPE	See Instrument Data Sheet	MTL	See data sheet
VIBRATION MONITORS & EQUIP.	MFR	As per Sub vendor List	TYPE	See Instrument Data Sheet	MTL	See data sheet
THERMOCOUPLES	MFR	As per Sub vendor List	TYPE	See Instrument Data Sheet	MTL	See data sheet
RTD'S	MFR	As per Sub vendor List	TYPE	See Instrument Data Sheet	MTL	See data sheet
SOLENOID VALVES	MFR	AFC	TYPE	See Instrument Data Sheet	MTL	See data sheet
ROLLER	MFR	As per Sub vendor List	MODEL & (QTY SPARE POINTS)	SEE PANEL DATA SHEET	MTL	
	MFR		TYPE		MTL	

to be filled as per vendor P&ID, or refer to P&ID, gauge board page to be added
HY Reply: it is according to PID latest Revision

MENTS LIQUID-FILLED PRESSURE GAUGES: YES NO

LOCALLY

PANEL

LOCALLY

PANEL

MOUNTED

MOUNTED

MOUNTED

MOUNTED

() () ()	PROCESS GAS: INLET PRESS.	() () ()
() () ()	@ EA. STAGE	() () ()
() () ()	DISCH. PRESS.	() () ()
() () ()	@ EA. STAGE	() () ()
() () ()		() () ()
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REMARKS:



نگهداشت و افزایش تولید میدان نفتی بینک
سطح الارض و ابنیه تحت الارض/بسته ایستگاه تقویت فشار گاز
خرید پکیج های کمپرسور گاز (رفت و برگشتی) بینک
قرارداد (BK-HD-GCS-CO-0008_03)



DETAILED D/SH FOR COMPRESSOR (API-618) WITH CERTIFICATES

شماره پیمان:
053 - 073 - 9184

شماره صفحه: 22 از 23

پروژه	بسته کاری	صادرکننده	تسهیلات	رشته	نوع مدرک	سریال	نسخه
BK	GCS	HY	120	ME	DS	0001	V01

INSTRUMENTATION (CONT'D)

MISCELLANEOUS INSTRUMENTATION

SIGHT FLOW IND. (COOLANT ONLY)	(☒ ☐ ☐)	FOR:	☐ INTERCOOLER(S) ☐ AFTER CLR ☐ OIL COOLER
			☒ CYL JACKET COOLANT ☒ ROD PRESS. PKG COOLANT
PNEUMATIC PRESSURE TRANSMITTERS	(☐ ☐ ☐)	FOR:	
PRESSURE TRANSMITTERS (ELEC. OUTP.)	(☒ ☐ ☐)	FOR:	Valve Unloader
PNEUMATIC LEVEL TRANSMITTERS	(☐ ☐ ☐)		
ALARM HORN & ACK'N'LT TEST BUTTON	(☐ ☐ ☐)		
CONDUIT & WIRING W/JUNCT. BOXES (CON-SOLES)	(☒ ☐ ☐)		
TEST VALVES	(☐ ☐ ☐)	FOR:	
DRAIN VALVES	(☒ ☐ ☐)	FOR:	Cooler , damper
GAUGE GLASS(ES)	(☒ ☐ ☐)	FOR:	Oil, Lubricator, Distance Piece Pot, Crank case frame
TACHOMETER	(☐ ☐ ☐)		SPEED RANGE _____ TO _____ r/min
CRANKSHAFT KEY PHASER AND TRANSDUCER	(☒ ☐ ☐)	FOR:	

SEPARATE LUBE OIL CONSOLE INSTRUMENTATION:

PURCH. TO LIST REQ'MTS IN ADDITION TO ANY ABOVE REQ'MTS

liquid level in reservoir

Havayar Reply: please clarify comment, instrument refer to PID

SEPARATE COOLING WATER CONSOLE INSTRUMENT:

PURCH. TO LIST REQ'MTS IN ADDITION TO ANY ABOVE REQ'MTS

liquid level in reservoir

Havayar Reply: please clarify comment, instrument refer to PID

RELIEF VALVES

LOCATION

BY

MANUFACTURER

TYPE

SIZE

SETTING

1 st Discharge	(☐ ☒ ☐)	Later	Later	Later	Later
2nd Discharge	(☐ ☐ ☐)	Later	Later	Later	Later
Main Oil Pump Discharge Discharge	(☒ ☐ ☐)	Later	Later	Later	Later
Aux Oil Pump Discharge Discharge	(☒ ☐ ☐)	Later	Later	Later	Later
N2 Gas Supply for Rod Packing	(☒ ☐ ☐)	Later	Later	Later	Later
N2 Gas Supply for Intermediate Packing	(☒ ☐ ☐)	Later	Later	Later	Later
	(☐ ☐ ☐)				
	(☐ ☐ ☐)				
	(☐ ☐ ☐)				
	(☐ ☐ ☐)				

NOTES: SEE MOTOR DATA SHEET FOR ADDITIONAL MOTOR INSTRUMENTATION REQUIREMENTS

to be rechecked
HY Reply: it is as per
PID

ADDITIONAL INSTRUMENTATION REMARKS/SPECIAL REQUIREMENTS:

 NISOC	نگهداشت و افزایش تولید میدان نفتی بینک سطح الارض و ابنیه تحت الارض/بسته ایستگاه تقویت فشار گاز خرید پکیج های کمپرسور گاز (رفت و برگشتی) بینک قرارداد (BK-HD-GCS-CO-0008_03)	 HAVAYAR INDUSTRIAL GROUP
شماره پیمان: 053 - 073 – 9184	DETAILED D/SH FOR COMPRESSOR (API-618) WITH CERTIFICATES	شماره صفحه : 23 از 23
	نسخه سریال نوع مدرک رشته تسهیلات صادرکننده بسته کاری پروژه	
	V01 0001 DS ME 120 HY GCS BK	

NOTES

1	1) PACKING COOLANT CONSOLE AND CYLINDER JACKETS HAVE COMMON COOLING WATER DISTRIBUTION SYSTEM.	Rev
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