

	نگهداشت و افزایش تولید میدان نفتی بینک بسته‌های کاری تحت‌الارض احداث خطوط انتقال گاز/مایعات گازی از ایستگاه تقویت فشار گاز بینک تا ایستگاه تزریق گاز سیاه‌مکان/واحد بهره برداری بینک							  	
	DATA SHEETS FOR ON/OFF & SHUTDOWN VALVES								
شماره پیمان: 053 - 073 - 9184	پروژه	بسته کاری	صادرکننده	تسهيلات	رشته	نوع مدرک	سریال	نسخه	شماره صفحه: 1 از 6
	BK	PPL	PEDCO	320	IN	DT	0006	D02	

طرح نگهداشت و افزایش تولید 27 مخزن

DATA SHEETS FOR ON/OFF & SHUTDOWN VALVES

نگهداشت و افزایش تولید میدان نفتی بینک

D02	JUN.2023	AFC	P.Hajisadeghi	M.Fakharian	A.M.Mohseni	
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D00	MAY.2022	IFC	P.Hajisadeghi	M.Fakharian	M.Mehrshad	
Rev.	Date	Purpose of Issue / Status	Prepared by:	Checked by:	Approved by:	CLIENT Approval

Class: 1

CLIENT Doc. Number: F9Z-708585

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



نگهداشت و افزایش تولید میدان نفتی بینک
 بسته‌های کاری تحت‌الارض
 احداث خطوط انتقال گاز/مایعات گازی از ایستگاه تقویت فشار گاز بینک تا
 ایستگاه تزریق گاز سیاه‌مکان/واحد بهره برداری بینک



DATA SHEETS FOR ON/OFF & SHUTDOWN VALVES

شماره پیمان:

053 - 073 - 9184

پروژه

BK

بسته کاری

PPL

صادرکننده

PEDCO

تسهیلات

320

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نوع مدرک

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نسخه

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REVISION RECORD SHEET

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	DATA SHEETS FOR ON/OFF & SHUTDOWN VALVES								
شماره پیمان:	پروژه	بسته کاری	صادر کننده	تسهیلات	رشته	نوع مدرک	سریال	نسخه	شماره صفحه: 3 از 6
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REFERENCE DOCUMENTS :

1. Instrument & Control System Design Criteria	BK-PPL-PEDCO-320-IN-DC-0001
2. P&ID - Gas Pipeline (to Siahmakan G.I. Station)	BK-PPL-PEDCO-320-PR-PI-0001
3. P&ID - Condensate Pipeline (to Binak PU)	BK-PPL-PEDCO-320-PR-PI-0002
4. Piping Material Specification	BK-PPL-PEDCO-320-PI-SP-0001
5. Specification for Instrumentation	BK-GNRAL-PEDCO-000-IN-SP-0001
6. Specification For On-off Shut Down Valves(ESDVMOV)	BK-GNRAL-PEDCO-000-IN-SP-0006
7. Instrument Hook-Up Diagram	BK-PPL-PEDCO-320-IN-DG-0002
8. Process Basic of Design	BK-GNRAL-PEDCO-000-PR-DB-0001
9. Specification For Hazardous Area Classification	BK-GNRAL-PEDCO-000-SA-SP-0002
10. Specification For Painting	BK-GNRAL-PEDCO-000-PI-SP-0006

D02



نگهداشت و افزایش تولید میدان نفتی بینک
 بسته‌های کاری تحت‌الارض
 احداث خطوط انتقال گاز/مایعات گازی از ایستگاه تقویت فشار گاز بینک تا
 ایستگاه تزریق گاز سیاه‌مکان/واحد بهره برداری بینک



DATA SHEETS FOR ON/OFF & SHUTDOWN VALVES

شماره پیمان:	پروژه	بسته کاری	صادر کننده	تسهیلات	رشته	نوع مدرک	سریال	نسخه	شماره صفحه: 4 از 6
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GENERAL NOTES:

- Calculations shall be provided for each completely piped actuated valve assembly (including solenoid valve), the stroking times i.e. to close and to open.
- The duty, failure action and stroke time shall all be approved by the Purchaser.
- The actuator shall be designed to operate the valve through its full stroke.
- The full stroke time for on-off valve which is less or equal than 4" size, shall be max. 5 second and for valves greater than 4", 1 second shall be added to the 4 sec for each increment of 1" in valve size. The maximum fully stroke time shall be 10 seconds.
- The piping indicates corrosion allowance selected as per document "Piping & Pipeline Material Specification, No. " BK-PPL-PEDCO-320-PI-SP-0001 "
- Hydro-test duration shall be in accordance with API 6D.
- All ball valves shall be fitted with suitable 'end of travel' stops at the fully open and fully closed positions and a local position indicator. The design shall prevent the ingress of foreign material and corrosion products which would impair the operation of the stops. Devices capable of locking the valves in their safe position (ESDV in open or closed position) shall be provided for maintenance and shall be vendor's standard proven design.
- Vendor shall guarantee and demonstrate the required stroking speed, during the Functional Test (FAT).
- All accessories shall be mounted, together with solenoid valve, etc., on a 316SS sub-plate. Tubing shall be suitably sized TP 316L stainless steel with stainless steel double ferrule compression fittings.
- Solenoid valve shall be selected in accordance with low power type.
- All on/off valves shall be preferably fitted with single acting, spring return pneumatic actuators, completed with mounting kit. Also Partial Stroking test or pilot valve to be considered.
- The actuator shall be fail-safe in operation (as specified in data sheets) in loss of electrical signal or loss of air supply.
- The spring return actuator shall be "pre stressed".
- Pneumatic actuators will be sized on the basis of a minimum safety factor of 1.5 and a minimum air pressure of 3 Barg. The valve actuator torque shall be in excess of the required valve torque under all operating conditions.
- All actuators and accessories shall be clearly and permanently identified by nameplate. The nameplate shall be in stainless steel and affixed to the VALVE, actuator and accessories.
- For application in sour gas services, as indicated in individual data sheets, material of body, trim and all other wetted metal parts in contact with the sour gas shall meet the requirements of NACE, MR-01-75, latest edition.
- Material Test Certificate and calibration Certificate for all transmitters to be submitted by Vendor.
- Manual Reset to be consider for all Emergency Shut off solenoids as per P&ID.
- Disc/seat material shall be resilient to give a tight shut off feature.
- According to "Process Basic of Design" Document, Environmental Condition For Field Instrumentation of BINAK Complex Shall Be Considered As Per The Following:
 Maximum ambient temperature: 50 (°C)
 Minimum ambient temperature: -5 (°C)
 Maximum steel surface exposed to sun: 85 (°C)
 Maximum summer dry bulb: -
 Maximum Design relative humidity (%): 100
 Minimum Design relative humidity (%): 0
- Flow direction shall be permanently and clearly indicated on the valve body.
- External grounding shall be provided for each solenoid valve.
- Valves in safety related services should have been fire tested and certification to be provided by Vendor.
- Seat rings shall be spring loaded and so designed that line pressure will assist in sealing round the ball.
- Valve stem extension shall be detachable for easy replacements.
- At least two stem seals shall be provided with facility for injection of secondary sealant and with stainless steel fittings.
- Stem seal shall be replaceable while the valve is in closed operation position.
- Short stroke single acting pneumatic piston actuators shall preferably be used on emergency shutdown service.
- Valve color shall be Gray as per Project Specification For Painting, Doc.No.BK-GNRL-PEDCO-000-PI-SP-0006. Actuator color shall be Red for ESD application.

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شماره ۵ صفحه: 5؛ 6

On-Off Valve																																	
TAG NO:		ESDV-3201		P&ID NO :		BK-PPL-PEDCO-320-PR-P1-0001_D01 (page 1 of 3)				SERVICE:		FROM DEHYDRATION (PK-2101)																					
FLUID STATE:		HYDROCARBONE GAS		PHASE:		GAS				AREA CLASSIFICATION:		Zone 2, IIB T4																					
SERVICE CONDITION								UNITS		Max Flow		Norm. Flow		Min. Flow		Shut-Off																	
	1	FLOW RATE						kg/h		-		17170.80		-		-																	
	2	INLET PRESSURE						bar(g)		50.92				-		-																	
	3	OUTLET PRESSURE						bar(g)		50.92				-		-																	
	4	DIFFERENTIAL PRESSURE						bar(g)		-				-		62																	
	5	INLET TEMPERATURE						°C		58.3				-		-																	
	6	DENSITY(Mix./Gas/Liquid)						kg/m3		55.82				-		-																	
	7	VISCOSITY (GAS/LIQ.)						cP		0.013				-		-																	
	8	VAPOR PRESSURE Pv						bar(a)		-				-		-																	
	9	CRITICAL PRESSURE						bar(g)		104.9				-		-																	
LINE	10	PIPE LINE SIZE		IN		6" & SCH.80				52	TYPE				Single Acting , Spring Return																		
		& SCHEDULE		OUT		6" & SCH.80					53	SIZE				VTA		VTA															
	11	PIPING CLASS / PIPE LINE INSULATION / CORROSION ALLOWENCE				FN05 / PAINTED (Note 29) / 3mm								54	SPRING FAIL ACTION		Fail to Close																
VALVE BODY & BONNET	12	TYPE				Full Bore Ball Valve/Trunion Mounted				55	MAX ALLOWABLE PRESSURE		VTA																				
	13	SIZE				6"					56	MIN REQUIRES PRESSURE		VTA																			
	14	MAX PRESS./TEMP				As per Specification For Pipeline Material (Note 5)						57	AVAILABLE AIR SUPPLY PRESS.		MAX/NOR/MIN: 8/7/4.5 barg (Note 14)																		
	15	MFR. & MODEL				Will be finalized later							58	BENCH RANGE		VTA																	
	16	BODY / BONNET MATL				A216 Gr. WCB (Note 5)								59	TRAVELING TIME		6 Sec.																
	17	LINER MATERIAL / ID				VTA									60	FUNCTION		On/Off															
	18	END CONNECTION		ANSI Class		6"		600#								61	LOCAL POSITION INDICATOR		Required														
	19	FLG FACE FINISH				RF											62	ACT. ORIENTATION		VTA													
	20	END EXT./MATL.				N/A												63	HAND WHEEL TYPE		Declutchable side mounted												
	21	FLOW DIRECTION				N/A													64	ADJUSTABLE LIMIT STOP		Yes											
	22	TYPE OF BONNET				Standard														65	INPUT SIGNAL		24VDC										
	23	LUBE & ISO VALVE				No															66	MFR. & MODEL		Will be finalized later									
	24	PACKING MATERIAL		PACKING TYPE		PTFE		Standard														67	TYPE		N/A								
	25	ENTRY DESIGN				Top Entry																	68	MFR. & MODEL		N/A							
26	NACE REQUIREMENTNACE (MR-0175/ISO 15156)				Yes				69	ON INCR SIGNAL OUTPUT INCR / DECR														N/A									
27	TRIM TYPE		TRIM MATERIAL		VTA		316+RPTFE			70	GAUGES													N/A									
28	SIZE		RATED TRAVEL		VTA		VTA				71	CAM CHARACTERISTIC												N/A									
29	CHARACTERISTICS				On/Off							72	AIR CONNECTION											N/A									
30	BALANCED / UNBALANCED				BALANCED								75	TAG NO. :										EZSC-3201 /EZSO-3201									
31	RATED Cv		FL		XT		VTA							VTA										VTA		76	TYPE		QUANTITY		Magnetically operated 'REED' contacts		2
32	PLUG / BALL MATERIAL				SS316 (Note 5)									77	CONTACTS / RATING									110V DC , 10A									
33	DISK/SEAT MATERIAL		SEAT TYPE		316+RPTFE (Note 19)		Soft seat (VTC)								78	ACTUATION POINT								Fully Open/Close									
34	CAGE / GUIDE MATERIAL				VTA											79	ENCLOSURE MATERIAL							Die Cast Aluminum									
35	STEM TYPE		STEM MATERIAL		Anti-Blow Out (As per reference 6)		forged, 13% chromium steel (As per reference 6)										80	WEATHER PROTECTION						IP-65									
36	LEAKAGE CLASS				ANSI Class V1													81	ELEC. CERTIFICATE					ELEC. CONNECTION			EEx "d", IIB T4		ISO M20 × 1.5				
37	VALVE STEM EXTENSION REQUIREMENT				YES														82	MFR. & MODEL				Will be finalized later									
38	TAG NO				ESOV-3201, PSOV-3201															83	SET PRESSURE			VTA									
39	TYPE				3 Way																84	PNEUMATIC CONNECTION		1/4" NPT									
40	BODY MATERIAL		WEATHER IP.		AISI 316 S.S		IP-65		85													GAUGES		FILTER			Required		Required				
41	ELE. CERTIFICATE		ELE. CONNECTION		EEx "d", IIB T4		ISO M20 x 1.5			86												MFR. & MODEL		Will be finalized later									
42	MANUAL RESET				Yes (Note 18)						87											ANSI/FCI LEAKAGE CLASS		Required									
43	POWER SUPPLY				24 VDC							88										HYDRO PRESSURE		Required									
44	PNEU. CONNECTION				1/4" NPT								89									FUNCTIONAL TEST		Required									
45	FUSIBLE LEAKAGE				No																	90											
46	BLOCK RELAY				No									91																			
47	QUICK EXHUST				Yes										92																		
48	FILTER REGULATOR				Yes											93							PASSIVE FIRE PROTECTION		No								
49	VOLUME TANK				Yes												94						API 6FA REQUIREMENTS		Yes								
50	MECHANICAL POSITION INDICATOR				Required													95					SIL 3 REQUIREMENTS		Yes								
51	MANUAL PNE. BYPASS VALVE FOR SOLENOID VALVE				Yes														96				PARTIAL STROKING VALVE TEST		Yes								

		نگهداشت و افزایش تولید میدان نفتی بینک بسته‌های کاری تحت‌الارض احداث خطوط انتقال گاز/ماپیات گازی از ایستگاه تقویت فشار گاز بینک تا ایستگاه تزریق گاز سیاه‌مکان/واحد بهره برداری بینک						 			
		DATA SHEETS FOR ON/OFF & SHUTDOWN VALVES									
شماره پیمان:		پروژه	بسته کاری	صادرکننده	تهیه‌یلات	رشته	نوع مدرک	سریال	نسخه	شماره صفحه: 6 از 6	
053 - 073 – 9038		BK	PPL	PEDCO	320	IN	DT	0006	D02		

D02

On-Off Valve

TAG NO:		ESDV-3202		P&ID NO :		BK-PPL-PEDCO-320-PR-PI-0001_D01 (page 3 of 3)				SERVICE:		FROM PIG LAUNCHER (PL-3201)				
FLUID STATE:		HYDROCARBONE GAS		PHASE:		GAS				AREA CLASSIFICATION:		Zone 2, IIB T4				
SERVICE CONDITION							UNITS		Max Flow	Norm. Flow	Min. Flow	Shut-Off				
	1	FLOW RATE					kg/h	-		17170.80	-	-				
	2	INLET PRESSURE					bar(g)	40			-	-				
	3	OUTLET PRESSURE					bar(g)	40			-	-				
	4	DIFFERENTIAL PRESSURE					bar(g)	-			-	62				
	5	INLET TEMPERATURE					°C	31.3			-	-				
	6	DENSITY(Mix.Gas/Liquid)					kg/m3	49.09			-	-				
	7	VISCOSITY (GAS/LIQ.)					CP	0.012			-	-				
	8	VAPOR PRESSURE Pv					bar(a)	-			-	-				
9	CRITICAL PRESSURE					bar(g)	104.9			-	-					
LINE	10	PIPE LINE SIZE		IN		8" & SCH.80			52	TYPE		Single Acting , Spring Return				
		& SCHEDULE		OUT		8" & SCH.80			53	SIZE		VTA VTA				
	11	PIPG CLASS / PIPE LINE INSULATION / CORROSION ALLOWENCE				FN05 / PAINTED (Note 29) / 3mm				54	SPRING FAIL ACTION		Fail to Close			
VALVE BODY & BONNET	12	TYPE				Full Bore Ball Valve/Trunion Mounted				55	MAX ALLOWABLE PRESSURE		VTA			
	13	SIZE				8"				56	MIN REQUIRES PRESSURE		VTA			
	14	MAX PRESS/TEMP				As per Specification For Pipeline Material (Note 5)				57	AVAILABLE AIR SUPPLY PRESS.		MAX/NOR/MIN: 8/7/4.5 barg (Note 14)			
	15	MFR. & MODEL				Will be finalized later				58	BENCH RANGE		VTA			
	16	BODY / BONNET MATL				A216 Gr. WCB (Note 5)				59	TRAVELING TIME		8 Sec.			
	17	LINER MATERIAL / ID				VTA				60	FUNCTION		On/Off			
	18	END CONNECTION		ANSI Class		8"		600#	61	LOCAL POSITION INDICATOR		Required				
	19	FLG FACE FINISH				RF				62	ACT. ORIENTATION		VTA			
	20	END EXT./MATL.				N/A				63	HAND WHEEL TYPE		Declutchable side mounted			
	21	FLOW DIRECTION				N/A				64	ADJUSTABLE LIMIT STOP		Yes			
	22	TYPE OF BONNET				Standard				65	INPUT SIGNAL		24VDC			
	23	LUBE & ISO VALVE				No				66	MFR. & MODEL		Will be finalized later			
	24	PACKING MATERIAL		PACKING TYPE		PTFE		Standard	67	TYPE		N/A				
	25	ENTRY DESIGN				Top Entry				68	MFR. & MODEL		N/A			
26	NACE REQUIREMENTNACE (MR-0175/ISO 15156)				Yes				69	ON INCR SIGNAL OUTPUT INCR / DECR		N/A				
TRIM	27	TRIM TYPE		TRIM MATERIAL		VTA		316+RPTFE	70	GAUGES		N/A				
	28	SIZE		RATED TRAVEL		VTA		VTA	71	CAM CHARACTERISTIC		N/A				
	29	CHARACTERISTICS				On/Off				72	AIR CONNECTION		N/A			
	30	BALANCED / UNBALANCED				BALANCED				75	TAG NO. :		EZSC-3202 /EZSO-3202			
	31	RATED Cv		FL		XT		VTA	VTA	VTA	76	TYPE		QUANTITY	Magnetically operated 'REED' contacts	2
	32	PLUG / BALL MATERIAL				SS316 (Note 5)				77	CONTACTS / RATING		110V DC , 10A			
	33	DISK / SEAT MATERIAL		SEAT TYPE		316+RPTFE (Note 19)		Soft seat (VTC)	78	ACTUATION POINT		Fully Open/Close				
	34	CAGE / GUIDE MATERIAL				VTA				79	ENCLOSURE MATERIAL		Die Cast Aluminum			
	35	STEM TYPE		STEM MATERIAL		Anti-Blow Out (As per reference 6)		forged, 13% chromium steel (As per reference 6)	80	WEATHER PROTECTION		IP-65				
36	LEAKAGE CLASS				ANSI Class VI				81	ELEC. CERTIFICATE		ELEC. CONNECTION	EEx "d", IIB T4	ISO M20 × 1.5		
37	VALVE STEM EXTENSION REQUIREMENT				YES				82	MFR. & MODEL		Will be finalized later				
SOLENOID VALVE	38	TAG NO				ESO-V-3202, PSOV-3202				83	SET PRESSURE		VTA			
	39	TYPE				3 Way				84	PNEUMATIC CONNECTION		1/4" NPT			
	40	BODY MATERIAL		WEATHER IP.		AISI 316 S.S		IP-65	85	GAUGES		FILTER	Required	Required		
	41	ELE. CERTIFICATE		ELE. CONNECTION		EEx "d", IIB T4		ISO M20 x 1.5	86	MFR. & MODEL		Will be finalized later				
	42	MANUAL RESET				Yes (Note 18)				87	ANSI/FCI LEAKAGE CLASS		Required			
	43	POWER SUPPLY				24 VDC				88	HYDRO PRESSURE		Required			
SPECIAL / ACCESS.	44	PNEU. CONNECTION				1/4" NPT				89	FUNCTIONAL TEST		Required			
	45	FUSIBLE LEAKAGE				No				90						
	46	BLOCK RELAY				No				91						
	47	QUICK EXHUST				Yes				92						
	48	FILTER REGULATOR				Yes				93	PASSIVE FIRE PROTECTION		No			
	49	VOLUME TANK				Yes				94	API 6FA REQUIREMENTS		Yes			
	50	MECHANICAL POSITION INDICATOR				Required				95	SIL 3 REQUIREMENTS		Yes			
	51	MANUAL PNE. BYPASS VALVE FOR SOLENOID VALVE				Yes				96	PARTIAL STROKING VALVE TEST		Yes			

NOTE:

VTA : VENDOR TO ADVISE

** PMS: Piping Material Specification