



Saipem



PROJECT No. 33320

Originator Company



AGIP GAS BV

Libyan Branch

Western Libya Gas Project
Contract N° 0140/NC/02

SABRATHA PLATFORM

Job N°:	-	Unit:	-
Company Document No :		Rev.	
??-?-??-X-O-38PB-01		A2	
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503-00-1517		A	
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SICES S.p.A.

DATA SHEET FOR RECIPROCATING PUMP

1		
2	GENERAL NOTES	
3		
4	1) ALLOWABLE AND REQUIRED NPSH ARE REFERRED TO UNDERSIDE OF BASEPLATE	
5		
6	2) NOZZLES SHALL BE DESIGNED TO WITHSTAND TWICE THE EXTERNAL LOADS SPECIFIED IN API 674	
7	AND BASEPLATE SHALL BE SUITABLE TO WITHSTAND THE TRANSMITTED LOADS.	
8		
9	3) PUMP SHALL BE WITHOUT LEAKGE TYPE BY COLLECTING THE GLYCOL DROPLETS FROM PACKING	A2
10	SEAL TO THE SUCTION LINE (AS PER SPECIFICATION T-03-S-N-0001-00 Rev.A3 Par. 5.9).	A2
11	4) VOID	
12		
13	5) VOID	
14		
15	6) VOID	
16		
17	7) FOR MOTOR DESIGN SEE SPECIFICATION No. T-02-GE-0002-00 Rev.A4. FOR ENVIRONMENTAL	
18	CONDITIONS SEE SPECIFICATION No. T-01-SZ-0001-00 Rev.A3.	
19		
20	8) MOTORS RATED 7.5 kW AND ABOVE SHALL BE EQUIPPED WITH SPACE HEATER AND AMPEROMETER.	
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DATA SHEET FOR RECIPROCATING PUMP

1	PUMP	NUMBER OF UNITS	OPER.: 1	STAND BY: 1
2	MANUFACTURER		PERONI POMPE	
3	MODEL		TITANO 3120 Ø65x70	
4	PURCHASE ORDER No.			
5	DRIVER	TYPE	SPECIFICATIONS	
6				
7	OPERATING CONDITIONS			
8	OPERATION		<input checked="" type="checkbox"/> CONTINUOUS <input type="checkbox"/> DISCONTINUOUS	
9	HANDLED FLUID		TEG	
10	CAPACITY	l/h	MIN. -	DESIGN 11770 MAX. 10700
11	TOXIC COMPOUNDS		<input type="checkbox"/> YES <input type="checkbox"/> NO	
12	CORROSIVE COMPOUNDS		<input type="checkbox"/> YES <input type="checkbox"/> NO	
13	SOLIDS	%	SIZE mm	
14	TEMPERATURE	°C	MIN. 0	OPER. 76
15	DENSITY	kg / mc	-	at MIN.Temper. 1078 at OPER.Temper.
16	VISCOSITY	cP	-	at MIN.Temper. 7 at OPER.Temper.
17	SUCTION PRESSURE	bar g	MIN. -	NORMAL 0.1 MAX. 3.5
18	DISCHARGE PRESSURE	bar g		NORMAL 82 MAX. -
19	DIFFERENTIAL PRESSURE	bar		NORMAL 81.9 MAX. -
20	VAPOUR PRESSURE	bar a	0.03	at OPER.Temper.
21	AVAILABLE N.P.S.H.	m	> 7	(SEE NOTE 1)
22	ESTIMATED ABSOR. POWER	kW	26.8	
23	AUXILIARY FLUIDS:	<input type="checkbox"/> COOLING <input type="checkbox"/> HEATING <input type="checkbox"/> FLUSHING <input type="checkbox"/> WASHING <input type="checkbox"/> INJECT.		
24	FLUID	TYPE		
25	GAUGE PRESSURE	bar g	NORM.	DESIGN
26	INLET TEMPERATURE	°C		
27	DP MAX	bar		
28	FLUID	TYPE		
29	GAUGE PRESSURE	bar g	NORM.	DESIGN
30	INLET TEMPERATURE	°C		
31	DP MAX	bar		
32	FLUID	TYPE		
33	GAUGE PRESSURE	bar g	NORM.	DESIGN
34	INLET TEMPERATURE	°C		
35	DP MAX	bar		
36	MATERIAL IN CONTACT WITH HANDLED FLUID			
37	CONSTRUCTION CHARACTERISTICS (CONSTRUCTION CODE: API 674)			
38	PUMP SPEED	rpm	MIN.	NORMAL MAX. 235
39	PLUNGER	AVERAGE SPEED m / s	0.63	at 235 rpm
40	STROKE / DIAMETER	mm	70 / 65	
41	PUMPING HEADS NUMBER			
42	ABSORBED POWER at shaft	kW	30.45	at 235 rpm
43	REQUIRED N.P.S.H.	m	(SEE NOTE 1)	6.5
44	DESIGN PRESSURE	bar g	100	
45	DESIGN TEMPERATURE	°C	100	
46	COUPLING	MANUFACTURER AND TYPE	ITALIAN / ELASTIC TYPE (<input type="checkbox"/> NON-SPARKING GUARDS)	
47	SEAL TYPE			
48	CONTAMINATION		<input type="checkbox"/> ALLOWED	<input checked="" type="checkbox"/> NOT ALLOWED
49	LEAKAGE		<input type="checkbox"/> ALLOWED	<input checked="" type="checkbox"/> NOT ALLOWED (SEE NOTE 3)
50	AIR ENTRAINMENT		<input type="checkbox"/> ALLOWED	<input checked="" type="checkbox"/> NOT ALLOWED
51	INTEGRAL RELIEF VALVE		<input type="checkbox"/> YES	<input type="checkbox"/> NO SETTING bar g
52	COUPLING GUARDS		<input checked="" type="checkbox"/> YES	<input type="checkbox"/> NO MATER.
53	CRANKMECH. LUBRICATION		<input checked="" type="checkbox"/> SPLASH	<input type="checkbox"/> FORCED
54	PACKING LUBRICATION		<input type="checkbox"/> YES	<input type="checkbox"/> NO
55	SPEED VARIATION BY		<input type="checkbox"/> VARIATOR	<input type="checkbox"/> HYDRAULIC <input type="checkbox"/> MECHANIC.)
56			<input type="checkbox"/> INVERTER	
57	REACCELERATION		<input checked="" type="checkbox"/> NO	<input type="checkbox"/> YES
58	PULSATION DUMPER		<input type="checkbox"/> NO	<input checked="" type="checkbox"/> YES MAX RESIDUAL PULSATION: 2 %
59	MAX.SOUND PRESSURE	db(A)	85	

Saipem HYUNDAI <small>HEAVY INDUSTRIES CO., LTD.</small> PROJECT No. 33320		AGIP GAS BV Libyan Branch Western Libya Gas Project Contract N° 0140/NC/02 SABRATHA PLATFORM		Job N°: -		Unit: -	
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Originator Company		SICES S.p.A.					
DATA SHEET FOR RECIPROCATING PUMP							
1 CONNECTIONS LIST							
		Ø LINE	LINE RATING	Ø NOZZLE	NOZ. TYPE / RAT.	FACING	COUNTERFL.
3	SUCTION	4"	150 #	3"	FLG 150#	RF	<input type="checkbox"/>
4	DISCHARGE	3"	600 #	2"	FLG 600#	RJ	<input type="checkbox"/>
5							<input type="checkbox"/>
6							<input type="checkbox"/>
7 DRIVER							
8	ELECTRIC MOTOR	ITEM					
9	DATASHEET NUMBER		(See Sheet 5)				
10	RATED POWER	kW		45			
11	DRIVER TYPE	ELECTRICAL MOTOR					
12 INSTALLATION							
13	LOCATION			<input type="checkbox"/> INDOOR		<input checked="" type="checkbox"/> OUTDOOR	
14	SHELTERED			<input type="checkbox"/> YES		<input checked="" type="checkbox"/> NO	
15	HEATED			<input type="checkbox"/> YES		<input checked="" type="checkbox"/> NO	
16 MATERIALS (MATERIAL CLASS: C.S.)							
17	FRAME	Cast iron		PUMP BODY		Carbon steel	
18	CONNECTING ROD BEARING	Thin wall		PLUNGER		AISI 420 quenched / chromiumed	
19	CRANKSHAFT BEARING	Roller type		CYLINDER (STUFFING BOX)		Carbon steel	
20	CROSSHEAD BEARING	Thin wall		VALVE		AISI 420 Hardened	
21	CRANKSHAFT	Alloy C.S.		VALVE SEAT		AISI 420 Hardened	
22	CONNECTION ROD	Modular cast iron		PLUNGER GUIDE		PTFE + carbographite	
23	CROSSHEAD	Cast iron		LANTERN		AISI 316	
24	CROSSHEAD PIN	Alloy C.S.		PACKING		Soft braid	
25	MANIFOLD	Carbon steel					
26	ALLOWED LOADS ON	PARALLEL TO SHAFT		VERTICAL		HORIZON. 90° TO SHAFT	
27	FLANGES (NOTE 2)	FORCE [N]	MOM. [N m]	FORCE [N]	MOM. [N m]	FORCE [N]	MOM. [N m]
28	SUCTION	1335	470	890	720	1246	1140
29	DISCHARGE	1780	679	1157	1004	1424	1330
30							
31							
32 INSPECTION and TESTING (AS PER API 674 as Minimum)							
33	DIMENSIONAL CONTROL			<input type="checkbox"/> WITNESSED		<input type="checkbox"/> NOT WITNESSED	
34	PERFORMANCE			<input type="checkbox"/> WITNESSED		<input type="checkbox"/> NOT WITNESSED	
35	U. LOAD			<input type="checkbox"/> WITNESSED		<input type="checkbox"/> NOT WITNESSED	
36	STRIP-DOWN			<input type="checkbox"/> WITNESSED		<input type="checkbox"/> NOT WITNESSED	
37	HYDROSTATIC			<input type="checkbox"/> WITNESSED		<input type="checkbox"/> NOT WITNESSED	
38	Hydrost. TEST PRESSURE 150 bar g DESIGN PRESSURE 100 bar g DESIGN TEMPERATURE 100 °C						
39	For more detailed requirements see inspection data sheet (IDS) Number: T-03-SN-0201-00 Rev.A2 (where applicable)						
40 MASSES							
41	PUMP	kg	540	SPEED VARIATOR		kg	N.A.
42	MOTOR	kg	380	BASEPLATE / SKID / TROLLEY		kg	430
43	GEAR REDUCER	kg	150	TOTAL		kg	~ 1600
44 SUPPLY LIMITS (<input checked="" type="checkbox"/> = INCLUDED)							
45	<input checked="" type="checkbox"/> COMM. BASEPLATE / SKID / TROLLEY FOR:			<input type="checkbox"/> BOLTS (<input type="checkbox"/> DRIVER <input type="checkbox"/> FOUNDATION)			
46	- <input checked="" type="checkbox"/> PUMP - <input type="checkbox"/> VARIATOR			<input type="checkbox"/> BELT TYPE No. SEZ.			
47	- <input checked="" type="checkbox"/> MOTOR - <input checked="" type="checkbox"/> GEAR			<input type="checkbox"/> PUMP PULLER diam mm COLE No.			
48	<input checked="" type="checkbox"/> COUPLING (<input checked="" type="checkbox"/> GUARDS <input checked="" type="checkbox"/> FAST/SLOW)			<input type="checkbox"/> MOTOR PULLER diam mm COLE No.			
49	<input type="checkbox"/> SAFETY VALVE (SETTING. bar g)			<input type="checkbox"/> TEMPORARY SUCTION STRAINERS			
50	<input checked="" type="checkbox"/> DRIVER			<input type="checkbox"/> LUBE OIL SYSTEM			
51	<input type="checkbox"/> SHOP TEST			<input type="checkbox"/> STRIP-DOWN AFTER TEST			
52	<input checked="" type="checkbox"/> SPECIAL TOOLS AND WRENCHES			<input checked="" type="checkbox"/> No. 10 COPIES OF INSTRU. BOOK			
53	<input checked="" type="checkbox"/> SPARE PARTS FOR TWO YEARS			IN ENGLISH LANGUAGE			
54	<input checked="" type="checkbox"/> DRIVER / PUMP ASSEMBLY:			<input type="checkbox"/> PULSAT.DUMPER (RES.PULS. %)			
55	- <input checked="" type="checkbox"/> IN SHOP			<input type="checkbox"/> SPEED VARIATOR (OR INVERTER)			
56	- <input type="checkbox"/> ON FIELD			<input type="checkbox"/> SPEED INDICATOR (<input type="checkbox"/> DIG. <input type="checkbox"/> ANAL.)			
57	<input checked="" type="checkbox"/> GEAR REDUCER			<input type="checkbox"/> PRESSURE GAUGE (RANGE bar g)			
58	<input checked="" type="checkbox"/> SPARE PARTS FOR COMMISSIONING & START-UP						
59							



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DATA SHEET FOR RECIPROCATING PUMP MOTOR

1 MOTOR DATA

2 (BY BUYER & PUMP SUPPLIER)

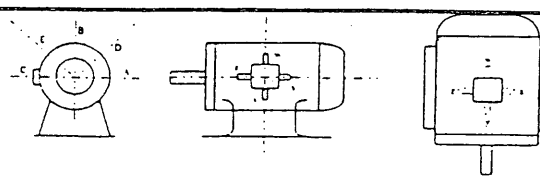
3	SITE COND.	AMBIENT PRESSURE	mbar	1015
4		AMBIENT TEMPERATURE	°C	MIN. 2.8 DESIGN 35 MAX. 35
5		AREA CLASSIFICATION		Eexd
6		GAS GROUP		IIB
7		TEMPERATURE CLASS		T3
8		TYPE OF PROTECTION		Zone 2
9	BASIC DATA	SUPPLY SYSTEM		V 400+/-10% Ph. 3 Hz 50+/-2%
10		NEUTRAL		<input type="checkbox"/> UNEARTHED <input type="checkbox"/> RESIST.EARTHED <input checked="" type="checkbox"/> SOLID EART.
11		COOLING SISTEM		<input type="checkbox"/> TOTALLY ENCLOSED FAN COOLED <input type="checkbox"/> WATER PROOF
12				<input type="checkbox"/> TOTALLY ENCLOSED NON-VENTIL. <input type="checkbox"/>
13		DEGREE OF ENCLOSURE PROTECT.		IP 55
14		SERVICE FACTOR		1 - 1.5
15		SYNCHRONOUS SPEED	rpm	<input type="checkbox"/>
16		DIRECTION (viewed from non-drive end)		CW CCW Bi-Dir.
17		INSULATION CLASS		<input type="checkbox"/> F <input type="checkbox"/> <input type="checkbox"/>
18		MAX.PERMITTED TEMP.RISE		B
19		METOD OF STARTING		DIRECT ON LINE
20		WINDING CONNECTION		STAR DELTA
21		MOUNTING		<input type="checkbox"/> HORIZONTAL <input type="checkbox"/> VERTICAL
22		SLIDE RAILS		<input type="checkbox"/> NO YES <input type="checkbox"/>
23		SPACE HEATER (SEE NOTE 8)		<input type="checkbox"/> NO <input checked="" type="checkbox"/> YES VOLTAGE 220 V AC Ph.1

24 (BY MOTOR SUPPLIER)

25	STANDARD		BS IEC NEMA
26			<input type="checkbox"/> VDE <input type="checkbox"/>
27	FRAME REF No.		
28	MODEL/CAT No.		EB 30 225 M4 CEMP
29	OUTLINE DIMENSION DWG No.		
30	CONTINUOUS RATING POWER	kW	45
31	FULL LOAD	SPEED rpm	1480
32		CURRENT A	(=FLC) 82
33		TORQUE N m	(=FLT) 290,4
34	STARTING	CURRENT	% of FLC 610
35		TORQUE	% of FLT 240
36	PULL-OUT	TORQUE	% of FLT 270
37	EFFICIENCY (100/75/50%)		95 / 94 / 93
38	POWER FACTOR (100/75/50%)		0,83 / 0,78 / 0,67 @ STARTING 0,34
39	X/R RATIO		
40	TEMPERATURE RISE		CL.B
41	BEARING	TYPE	<input checked="" type="checkbox"/> BALL <input type="checkbox"/> ROLLER <input type="checkbox"/> SLEEVE
42		LUBRICATION	<input type="checkbox"/> OIL <input checked="" type="checkbox"/> GREASE
43		COOLING SYSTEM	
44	MOTOR WEIGHT		16411 380
45	NOISE LEVEL	dB	74 @ m
46	CERIFYING AUTHORITY		CESI
47	CERTIFICATE No.		
48			

49 MOTOR LIST

50	TAG No.	TERMINAL BOX		CABLE	
		Orient.	Connection Size	Size	Type
51					
52					
53					
54					
55					
56					



TERMINAL BOX LOCATION: