

Số: 2204 /HCMTBi-CD

Thái Bình, ngày 30 tháng 7 năm 2024

V/v: Báo giá vật tư phục vụ bảo dưỡng

Kính gửi: Quý công ty và nhà cung cấp quan tâm.

Hiện nay, Công ty Hóa chất mỏ Thái Bình – MICCO đang triển khai lập Dự toán và Kế hoạch lựa chọn nhà cung cấp đối với đơn hàng: Mua sắm vật tư phục vụ bảo dưỡng bơm 31P004. Để có cơ sở thực hiện lập Dự toán và Kế hoạch mua sắm Công ty Hóa chất mỏ Thái Bình – MICCO đề nghị Quý công ty báo giá vật tư, hàng hóa cụ thể như sau:

STT	Tên vật tư, hàng hóa	Hãng sản xuất	ĐVT	Số Lượng	Ghi chú
1	Bơm ly tâm ANS 400VAC-360A; R1303.1.151 Model: RCEV 65/80/360A Material: 1.4306S Liquid: AN -Solution max. 94%	FRIATEC	Cái	01	Có bản vẽ thiết bị kèm theo

- Địa điểm giao hàng: Nhà máy sản xuất Amon Nitrat – xã Thái Thọ, huyện Thái Thụy, tỉnh Thái Bình.
- Nhà cung cấp phải cung cấp đầy đủ chứng chỉ chất lượng và chứng chỉ xuất xứ của vật tư, hàng hóa.
- Giá vật tư, hàng hóa đã bao gồm các loại thuế khác, phí, lệ phí và các chi phí khác để đưa hàng đến kho của Bên mời chào giá.
- Báo giá phải do đại diện hợp pháp của đơn vị cung cấp ký và đóng dấu; Trường hợp ký thay phải thì người ký phải được ủy quyền của đại diện hợp pháp của nhà cung cấp kèm theo giấy ủy quyền, quyết định giao nhiệm vụ hoặc văn bản tương đương.

Công ty Hóa chất mỏ Thái Bình – MICCO thông báo tới Quý Công ty được biết. Nếu Quý Công ty Có khả năng cung cấp chủng loại vật tư nêu trên thì gửi báo giá cho chúng tôi theo địa chỉ sau:

Phòng Cơ điện – Công ty Hóa chất mỏ Thái Bình – MICCO.

Số điện thoại liên hệ: 0974448543

Mail: nguyenhonglam.anp@micco.com.vn.

Địa chỉ: Nhà máy sản xuất Amon Nitrat, xã Thái Thọ, huyện Thái Thụy, tỉnh Thái Bình

Thời hạn nhận báo giá: Đến 14 giờ 00 ngày 08 tháng 8 năm 2024.

Trân trọng./.

Nơi nhận:

- Như trên;
- Lưu: VT, CĐ.

GIÁM ĐỐC
Họ và Tên: Công Ty Hóa
Chất Mỏ Thái Bình -
Micco
Ký ngày: 30.07.2024
08:29:50

Vũ Hùng Việt

Uhde	Plant ANP	Customer MICCO	Code VINACOMIN	UAN	01-3166	Page 2	
GENERAL INFORMATION AN Solution Pump				TON	31P004		
				Item			
				Rev.	01		
Equipment AN Solution Pump			Vendor FRIATEC				
Released by	EN-MU	Name: Mr. Hans-Peter Gosmann					
		Phone: +49 (231) 547-2557					
		Fax: +49 (231) 547-52557					
		E-mail: Hans-Peter.Gosmann@thyssenkrupp.com					
	HN-PR	Name: Peter Kamermann					
		Phone: +49 (231) 547-3256					
		Fax: +49 (231) 547-53256					
		E-mail: Peter.Kamermann@thyssenkrupp.com					
No.	Rev	Info	No.	Rev	Info		
PLANT							
07	R	Plant location: Thai Tho Village / Thai Binh		09	R	Type of plant: Ammonium Nitrate	
08	R	Country: Vietnam		10	R	Plant capacity: 625 metric tons/day	
PUMP							
11	01	*	Manufacturer: Friatec				
12		*	Quotation-No:				
13		*	Date of quotation:				
14		*	Order-No.:				
15	R	SAP classification code (MaCK): RPU					
16	R	Date of purchase order:		23	R	UHDE purchase order No.:	
17	01	*	Model designation: RCEV 65/80/360 A	24	*	Machine size: Serial number:	
18		*	Place of manufacturing:				
19		*	Responsible engineer: Name:				
20		*	Phone:				
21		*	Fax:				
22		*	E-mail:				
DRIVER							
25		*	Manufacturer: Purchased by UHDE		37	R	TON:
26		*	Quotation-No.:				
27		*	Date of quotation:				
28		*	Order-No.:				
29	R	SAP classification code (MaCK):					
30	R	Date of purchase order:		38	R	UHDE purchase order No.:	
31	*	Model designation:		39	*	Driver size: Serial number:	
32		*	Place of manufacturing:				
33		*	Responsible engineer: Name:				
34		*	Phone:				
35		*	Fax:				
36		*	E-mail:				
REMARKS							
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52			R Information by UHDE Machinery		* Information by Machine Vendor		
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Uhde		Plant ANP	Customer MICCO	Code VINACOMIN	UAN	01-3166	Page 3
OPERATION CONDITIONS (SI-UNITS)						TON	31P004
AN Solution Pump						Item	
						Rev.	01
No.	Rev	Info	No.	Rev	Info		
GENERAL DATA							
01			Operation	Standby	10	01	PR Type of pump
02	P	TON	31P004	31PQ004	11	PR	Standard
03	P	Item			12	P	Type of operation
04	P	Quantity	1	1 (in store)	13	P	Installation
05	P	Driver	E-Motor	E-Motor	14	P	Insulation: type / thickness
06	P	Selfpriming	Yes		15	P	Winterization
07	01	P	Minimum flow protection	By-pass with FO external	16	P	Support type
08	P	Start-up conditions			17	P	Ex-Zone / Temp. Class
09	P	Number of starts / stops			18	P	Type of pump control
OPERATING CONDITIONS			Maximum	Normal	Minimum	Start-up	
19	P	Name of liquid	AN-Solution (max. 94%)				
20	P	Type of Liquid					
21	P	Hazard classification / Class					
22	P	Risk category / Class					
23	P	H2S-Concentration	ppm (wt.)	0	0		
24	P	Chloride concentration	ppm (wt.)	0	0		
25	P	Corrosive / Erosive agent					
26	P	Gas content	%	0.0	0.0		
27	P	Solids		-	-		
28	P	pH-value					
29	01	P	Temperature	°C	114.00	114.00	114.00
30	P	Density	kg/m³	1415.000	1415.000	1415.000	
31	P	Specific heat	kJ/kg K				
32	P	Vapour pressure	kPa a	36	36	36	
33	P	Dynamic viscosity	mPa s	3.130	3.130	3.130	
34	01	P	Capacity at suction nozzle	m³/h	34.00	30.00	10.00
35	01	P*	Capacity at discharge nozzle	m³/h	34.00	30.00	10.00
36	01	P*	Capacity at extraction nozzle	m³/h	34.00	30.00	-
37	P	Suction pressure	kPa a	101	108	101	
38	P*	Discharge pressure req./actual	kPa a	564	455	587	
39	*	Differential pressure actual	kPa	463	347	486	
40	*	Differential head actual	m	33.300	25.000	35.000	
41	P	Extraction pressure min. req.	kPa a	0	0	-	
42	*	Extraction pressure actual	kPa a	0	0	-	
43	P	NPSH available	m	4.700	5.200	4.700	
44	01	*	NPSH required	m	2.500	2.500	2.500
45	*	Speed	min-1	1500.00	1500.00	1500.00	
46	01	*	Efficiency	%	34.0		
47	01	*	Power consumption	kW	13.00		
48	*	Guarantee/Rated point by pump vendor					
49	P	Solids fraction	0	weight-%	Particle size	0	µm Solids properties - Hardness of particles -
PUMP DESIGN / UTILITY FLUIDS							
50	*	Min continuous flow req. Qmin	m³/h	thermal	stable	10.00	
51	*	Allow./Preferred operating region	m³/h	min	10.00	max.	49.00 min. 30.00 max. 45.00
52	*	Impeller diameter	mm	rated	320.00	max.	343.00 min. 250.00
53	*	Max power rated diameter	kW	at rated density	15.00	at max. density	15.00
54	*	Max. power max. diameter	kW	at rated density	18.00	at max. density	18.00
55	*	Shut off head	mm	at rated diameter	35.000	at max. diameter	41.000
56	01	*	Driver rated power E-Motor	kW	18.50	62	X* Max. sound pressure level req./actual dB(A) 85 / 73
57	*	Driver rated power Turbine	kW		63	X* Max. sound power level req./actual dB(A) /	
58	P	Crystallization temperature	°C		64	P* Design temperature req./actual °C 180.00 /	
59	P	Max. operating temperature	°C		65	P* Design pressure req./actual (suc./dis.) kPa g 900 /	
60	P	Max. operating density	kg/m³		66	* Max. allowable working pressure kPa g	
61	P	Max. suction pressure	kPa a		67	* Suction specific speed min-1	
			Fluid	Pressure	kPa a	Temp	°C Consumption m³/h Remark
68	P*	Heating					
69	P*	Cooling					
70	P*	Flushing					
71	P*	Barrier/Buffer					
72	P*	Quench					
REMARKS							
73		One pump in store!					
74		Row 62: value for pump only.					
75		P Information by UHDE Process R Information by UHDE Machinery * Information by Machine Vendor					

Uhde		Plant ANP	Customer MICCO	Code VINACOMIN	UAN	01-3166	Page 4	
PUMP CONSTRUCTION					TON	31P004		
AN Solution Pump					Item			
					Rev.	01		
No.	Rev	Info			No.	Rev	Info	
GENERAL DESIGN FIGURES								
01	01	*	Performance curve number		3.19.3036-1105			
02		*	No. of stages		1			
03	01	*	Rotation		CCW viewed from coupling end			
04	R	*	Inducer required		-			
05		*	Thrust balancing		Balancing holes			
IMPELLER DATA								
06		*	Impeller type		Closed for 1st stage for subsequent stages			
07		*	Number of vanes					
08	R		Impeller shall be individually secured		By impeller nut against axial movement along the shaft			
09		*	Impeller mounting		Overhung			
CASING DATA								
10		*	Casing type		Volute			
11		*	Casing mounting		Vertical			
12		*	Casing split		Radial (inner) (outer)			
NOZZLE CONDITION								
13		*	Designation		Size	Rating	Facing	
14	R	*	Suction		DN 80	PN 10	RF	
15	R	*	Discharge		2 1/2"	150	RF	
16	R	*	Drain		n.a.			
17	R	*	Vent		n.a.			
18	R	*	Condensate Flushing		n.a.			
19	R	*	Steam Flushing		n.a.			
20	R	*	Balance line		n.a.			
21	R	*						
SHAFT DIMENSIONS								
22		*	Shaft diameter at coupling		mm			
23		*	Shaft diameter between bearings		mm			
24		*	Span between bearing centers		mm			
25		*	Span between bearing and impeller		mm			
26		*	Critical speed		min-1	wet damped		
BEARING AND LUBRICATIONS								
27	R	*	Radial bearing		type : Antifriction		size : number :	
28	R	*	Thrust bearing		type : Antifriction		size : number :	
29	R	*	Lubrication		Grease			
30		*	Oil viscosity		-			
31		*	Size of bearing bracket					
32		*	Bearings are suitable for reverse rotation		Reserve rotation protection provided : -			
CLEARANCES								
33	01	*	Impeller wear ring		mm	-	acc. API610	
34	01	*	Bushing		mm	-	acc. API610	
35	01	*	Wear plate		mm	-	acc. API610	
WEIGHTS								
36	01	*	Pump		kg	700.00	41 n.a. kg	
37	01	*	Base plate		kg	150.00	42 n.a. kg	
38	01	*	Driver		kg	150.00	43 Total erection weight kg	
39		*	Coupling and coupling guard		kg		44 Total operation weight kg	
40		*	Gear		kg	0.00	45 Maintenance weight of heaviest part kg	
REMARKS								
45								
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60			R Information by UHDE Machinery		* Information by Machine Vendor			

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VERTICAL PUMP / PIT DIMENSIONS

AN Solution Pump

TON 31P004

Item

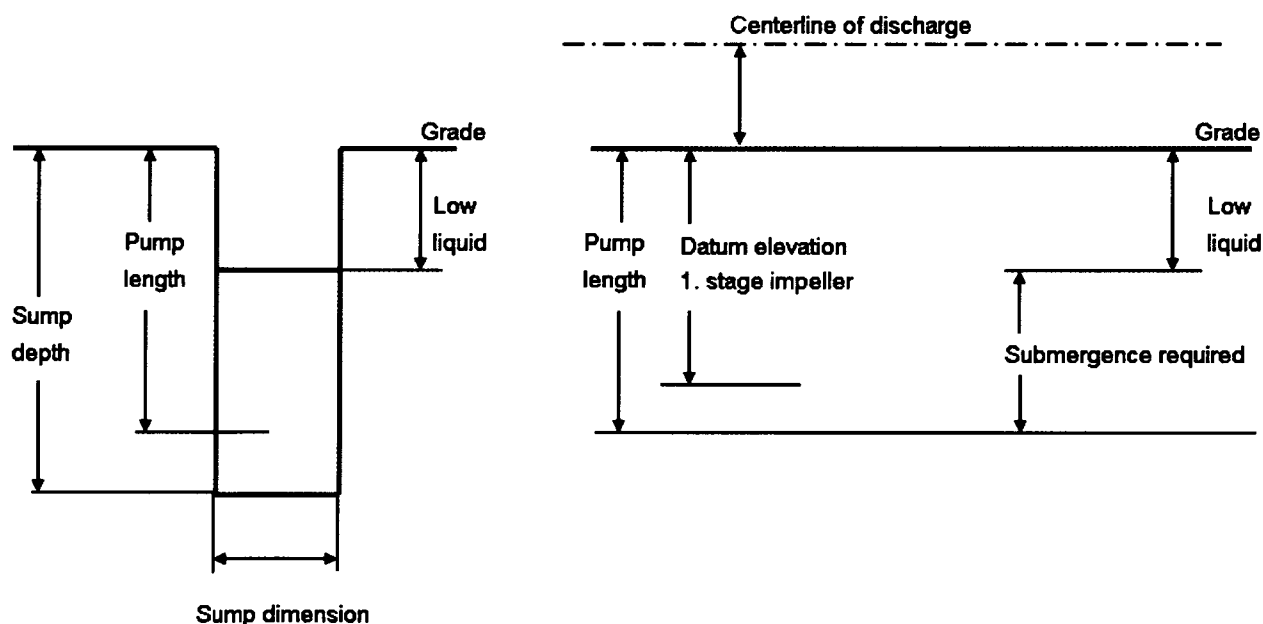
Rev. 01

RevInfo

VERTICAL PUMP CONSTRUCTION

1	R	Thrust at min. flow	N	up	down
2	R	Thrust at rated flow	N	up	down
3	R	Thrust at max. flow	N	up	down
4	R	Dimensions of mounting	mm	plate	flange
5	R	Column pipe connection			
6	R	Column pipe diameter / length	mm		/
7	R	Guide bushing no. / spacing	-mm		/
8	R	Guide bushing lubrication		Not allowed	
9	R	Line shaft construction/number of shafts			/
10	R	Line shaft / tube diameter	mm		/
11	R	Line shaft coupling fixing			
12	R	Suction can thickness	mm	0.00	
13	R	Suction can length / diameter	mm	0.00	/
14	R	Suction strainer type		-	
15	R	Vortex breaker required		Pump manufacturer has to check SSS.	
16	R	Vortex breaker Material		N.A	
17	R	Free User			

PIT ARRANGEMENT



18	R	Sump depth	mm	2000.00	22	01	R	Pump length	mm	1750.00
19	R	Sump dimension	mm	/	23		R	Submergence required	mm	
20	R	Low liquid level	mm		24		R	Centerline discharge	mm	
21	R	Pump can length	mm	0.00	25		R	Datum elevation 1. st. imp.	mm	

REMARKS

26	R	
27	01	R
28	R	
29	R	
30	R	
31	R	
32	R	
33	R	
34	R	
35	R	
36	R	
37	R	
38	R	
39	R	
40		

R Information by UHDE Machinery

* Information by Machine Vendor

Uhde		Plant ANP	Customer MICCO	Code VINACOMIN	UAN	01-3166	Page 6
ACCESSORIES					TON	31P004	
AN Solution Pump					Item		
No. Rev Info					Rev.	01	
GEAR							
01	*	Manufacturer	-	14	R	TON	-
02	*	Model designation	-	15	*	Toothing	-
03	R	Location	-	16	*	Thrust balancing	-
04	R	Standard	-	17	R*	Service factor	-
05	*	Maximum torque operation case	Nm 0	18	*	Speed input	min-1 0.00
06	*	Maximum torque gear rating	Nm 0	19	*	Speed output	min-1 0.00
07	*	Rated power	kW 0.00	20	*	Gear ratio	-
08	*	Power losses	kW 0.00	21	*	Moment of inertia	kgm² 0.00
09	*	Efficiency	% 0	22	R*	Lubrication system	-
10	*	Sense of rotation input shaft	- viewed from driver	23	*	Noise protection	-
11	*	Sense of rotation of output shaft	- viewed from driver	24	*	Oil volume	m³ 0.00
12	*	Type of journal bearing at pinion	-	25	*	Type of thrust bearing	-
13	*	Type of journal bearing at bull gear	-	26	*	Location of thrust bearing	-
DRIVER							
27	*	Manufacturer	Purchased by UHDE	37	R	Explosion protection	
28	*	Model designation		38	R	Temperature class	
29	*	Size		39	R*	Lubrication system	
30	R	Design		40	01 *	Nominal speed	min-1 1500.00
31	R	Protection plan		41	R	Voltage	V 380
32	R	Frequency / Phases	Hz / - 50 / 3	42	*	Rated current	A
33	01 *	Nominal power	kW 18.50	43	*	Starting current	A
34	01 *	Absorbed power	kW 13.00	44	R	Speed variation	
35	R	Delivered by		45	R	Maintained by	
36	R	With axial fan for one direction		46			
COUPLING							
47	R	Location	E-Motor / Pump				
48	*	Manufacturer	Flender				
49	*	Type	N-EUPEX A				
50	*	Model designation					
51	01 R*	Service factor	1,5				
52	*	Max. speed	min-1				
53	*	Max. capable torque	Nm				
54	*	Spacer length	mm				
55	*	Limited end float	mm				
56	R*	Lubrication requirements	Non-lubricated				
57	R	Standard	Manufacturer standard				
58	01 R	Balancing grade	2,5				
59	R*	Coupling guard	SS				
60	R*	Shaft journal	n.a.				
61	R*	Kind of fixing	Cylindrical with key				
62			X Driver half coupling maintained by pump manuf.		X	Demagnetization of coupling < 5 Gauss	
BASEPLATE							
63	R	Baseplate for	Pump & driver				
64	*	Standard / Size acc. Standard	Manufacturer standard / Refer ro remarks on page 10				
65	*	Size l x w x h	mm x x				
66	R	Including	X Lifting lugs		X	Earthing connection	
67	R		Drain rim		X	Jack screws for alignment	
68	*	Anchorbolts size					
69	R*	Suitable for grouting					
70	R*	Suitable for sliding installation					
REMARKS							
71							
72	01 *	Row 65: Mounting flange 36" / ANSI B16.5 / 150# / RF					
73							
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83		R Information by UHDE Machinery * Information by Machine Vendor					

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Uhde		Plant ANP	Customer MICCO	Code VINACOMIN	UAN	01-3166	Page 7
SEAL SYSTEM / ARCV					TON	31P004	
AN Solution Pump					Item		
No.	Rev	Info	No.	Rev	Info	Rev.	01

SEAL SYSTEM									
01	01	R	Type of sealing	Packing PTFE	03	R	Seal design acc. Standard	Manufacturer standard	
02		R	Seal arrangement	/			/		
MECHANICAL SEAL									
04	*		Manufacturer	-	16	*	Manufacturer code	-	
05	*		Model designation	-	17	*	API seal code	-	
06	*		Size	-	18	R*	Pressure in seal chamber	kPa a 0	
07	R		Temperature in seal chamber	°C 0.00	19	*	Seal design pressure	kPa a 0	
08	*		Seal design temperature	°C 0.00	20	*	Max. differential pressure at seal	kPa 0	
09	R*		Material code product side	-	21	R*	Equipped with pumping ring	-	
10	R*		Material code atmospheric side	-	22	R	Reserve pressure capability	-	
11	R		Seal flushing plan	-	23	R*	Seal flushing line design / material	-	
12	R		Aux. flushing plan	-	24	R*	Aux. flushing line design / material	-	
13	R		External seal flush system	-	25	R	Jacket required	-	
14	R		External seal flush system TON / PID	-	26	R*	Piping assembly flushing	-	
15	R		Quench arrangement	-	27	R*	Piping assembly heat exchanger	-	
PACKING									
28	*		Manufacturer	-	31	*	Number of packing rings	-	
29	*		Model designation	-	32	R*	Packing injection required	-	
30	*		Size	-	33	R*	Lantern ring required	-	
MAGNETIC COUPLING / CANNED MOTOR									
34	*		Manufacturer	-	45	*	Design temperature	°C 0.00	
35	*		Type	-	46	*	Design pressure	kPa g 0	
36	*		Model designation	-	47	*	Rated torque at	Nm 0	
37	*		Size	-	48	*	Rated power at	kW 0.00	
38	*		Rated torque at	Nm 0	49	*	Eddy current losses	kW 0.00	
39	*		Rated power at	kW 0.00	50	*	Viscosity losses	kW 0.00	
40	*		Max. capable torque	Nm 0	51	*	Max. surface temperature	°C 0.00	
41	*		Internal partial flow	m³/h 0.00	52	*	Max. particle size	µm 0	
42	*		Temp. rise partial flow	°C 0.00	53	R*	Monitoring system	-	
43	*		Wall thickness	mm 0.00	54	R*	Protection of stator / rotor	- / -	
44	*		Explosion protection / Temp. class	-	55	R*	Protection of winding / junction box	- / -	
MINIMUM FLOW CHECK VALVE									
56	*		Manufacturer	-	77	R	Capacity at pump disch.	m³/h 0.00	
57	*		Model designation	-	78	R	Capacity at min. flow nozzle	-	
58	*		Size	-	79	R	Capacity at man. start-up nozzle	-	
59	R		Installation	-	80	R	Max. pressure at pump disch.	- @ m³/h	
60	R		Minimum flow nozzle design	-	81	R*	Max. pressure at min. flow nozzle	- @ m³/h	
61	R		Manual start-up nozzle installation	-	82	R*	Max. pressure at man. start-up nozzle	-	
62			MATERIALS		83	*	Design temperature	°C 0.00	
63	R*		Casing	-	84	*	Design pressure	kPa g 0	
64	R*		Cone	-	85	*	Weight	kg 0.00	
65	R*		Spring	-	86		TESTS / MATERIAL CERTIFICATES		
66	R*		Throttle	-	87	R	Hydrostatic test	-	
67	R*		Slider casing / slider	-	88	R*	Test pressure	-	
68	R*		O-ring	-	89	R	Certificates	-	
69	R		API Material class	-	90				
70	R		acc. to standard	-	91				
71			NOZZLES						
72			Designation	Size	Rating	Facing	Position	Standard	Remarks
73	R*		Inlet nozzle	-	-	-	-	-	-
74	R*		Outlet nozzle	-	-	-	-	-	-
75	R*		Minimum flow nozzle	-	-	-	-	-	-
76	R*		Manual start-up nozzle	-	-	-	-	-	-
REMARKS									
92									
93									
94									
95									
96									
97									
98									
99									
100									
101									

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Uhde		Plant ANP	Customer MICCO	Code VINACOMIN	UAN 01-3166	Page 8			
MATERIAL / SCOPE OF SUPPLY					TON 31P004				
AN Solution Pump					Item				
					Rev. 01				
No.	Rev	Info	No.	Rev	Info				
MATERIAL SPECIFICATION									
01	R	Material code	API 610	29	R	Material class	A-7		
02		PUMP		30		MECHANICAL SEAL PRODUCT SIDE			
03	01	R* Casing / Barrel	1.4306S (304L)	31	R*	Rotating face	-		
04	01	R* Impeller	1.4306S (304L)	32	R*	Stationary face	-		
05		R* Inducer	-	33	R*	Auxiliary seal	-		
06	01	R* Shaft	1.4541	34	R*	Spring / Bellow	-		
07	01	R* Shaft sleeve	-	35	R*	Other parts	-		
08	01	R* Impeller wear ring	-	36		MECHANICAL SEAL ATMOSPHERIC SIDE			
09	01	R* Casing wear ring	-	37	R*	Rotating face	-		
10	01	R* Casing cover	1.4306S (304L)	38	R*	Stationary face	-		
11		R* Inner casing	-	39	R*	Auxiliary seal	-		
12		R* Shaft seal casing	1.4306 (304L)	40	R*	Spring / Bellow	-		
13	01	R* Casing gasket	PTFE	41	R*	Other parts	-		
14	01	R* Casing bolts	SS	42		PACKING			
15	01	R* Bearing bracket	CI / CS	43	R*	Packing			
16		COUPLING		44	R*	Gland			
17	01	R* Coupling spacer / hub	- / CI	45	R*	Lantern ring			
18		R* Coupling diaphragm	Perbunan	46		MAGNETIC COUPLING/ CANNED MOTOR			
19		R* Coupling guard	SS	47	R*	Can	-		
20		AUXILIARIES		48	R*	Rotor liner	-		
21	01	R* Base plate	Soleplate 1.4541	49	R*	Stator liner	-		
22		R* Binding screw		50	R*	Sleeve bearings radial / axial	- / -		
23		R* Support f. set screws		51		REMARKS			
24		R* Anchor bolts / Stilt bolts	- / -	52					
25		R* Thermosyphon system	-	53	01	Ni content >= 9%			
26		REMARKS		54					
27	R	No copper or copper alloys allowed		55					
SCOPE OF SUPPLY									
57	R X	Pump complete acc. to EDS		92	R	Pressure lube oil system	-		
58	R X	Base plate		93	R	Seal flush system	-		
59	R	Booster Pump		94	R	Interconnection piping oil system	-		
60	R	Driver		95	R	Interconnection piping seal system	-		
61	R X	Coupling		96	01 R	Utility piping for mechanical seal	-		
62	R X	Coupling guard		97	R	Piping to skid edge with flange for	-		
63	R	Gear		98					
64	R	Clutch		99	R	Thermal expansion valves in cooling water lines			
65	R	Min flow check valve		100	01 R	Instrumentation acc. PID	-		
66	R X	Min. flow orifice		101	R	Instrumentation for cooling water piping			
67	R	Constant level oiler		102	R	Inlet	Outlet		
68	R X	Grease quantity regulator		103	R				
69	R	Noise protection for		104	R				
70	R	Start-up strainer / vessel		106	R	Instrumentation for oil piping			
71	R X	Stainless steel shims		107	R	Inlet	Outlet		
72	01 R	Anchor bolts		108	R				
73	01 R	Jack screws		109	R				
74	R	Levelling pads		111	R	Instrumentation for mechanical seal piping			
75	R	Levelling check blocks		112	R	Inlet	Outlet		
76	01 R	Counter flanges with nuts, gaskets and bolts		113	R				
77	R	Insulation		114	R				
78	R X	Rotation arrow		116	R	Instrumentation for pump			
79	R X	Uhde nameplate		117	R	Axial bearing			
80	01 R	Set(s) of special tools		118	R	Radial bearing			
81	R	Shaft alignment device		119	R	Vibration monitoring			
82	R X	Commissioning spares		120	R	Temp. monitoring			
83	R	Capital spares		121	R	Rotor monitoring			
84	R	Spares for 2-year operation		122	R	Dry running protect.			
85	R X	Technical documentation		123	R	Winding protection			
86	R X	Inspection / testing		124					
SCOPE OF SERVICES									
127	R X	Complete assembly of supplies / Alignment certificate of skid		133	R X	Marking for	X Assembly	Dispatch	Erection
128	R X	Coupling drivers side completely machined		134	R X	Stamping of item no. and serial no. on the suction flange			
129	R X	Mounting of drivers		135	R	Cust. training	at vendors workshop	at site	
130	R X	Pickling	X Neutralizing	X Passivating			people for	days	
131	R X	Rust removal	X Primer coat	X Finishing coat		R Information by UHDE Machinery	* Information by Machine Vendor		

Uhde		Plant / Anlage			Customer / Kunde MICCO			Code / Kennwort VINACOMIN			UAN		01-3166		Page / Seite 9		
S P A R E P A R T S L I S T for COMMISSIONING - E R S A T Z T E I L L I S T E zum ANFAHREN														TON		31P004	
														ITEM			
														REV.		01	
Item Einheit		Description Benennung		Vendor Lieferant		Vendor's order No. Lieferant Auftrags Nr.		Uhde order No. Uhde Bestell Nr.			Vendor's reference No. Lieferant Angebots Nr.			Agitator parts list Rührwerksstückliste		Client's designation Kunden-Bezeichnung	
1 Stk.		AN Solution Pump															
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	
No. / Lfd. Nr.	Rev.	Designation / Bezeichnung	Drawing No. / Zeichnungs Nr. Part No. / Pos. Nr. Standard / Norm	Dimensions / Abmessungen Material / Werkstoffe	Manufacturer / Hersteller Part No. / Teile Nr.	No. of parts fitted per item / Eingebaute Teile pro Einheit	No. of parts fitted in all items / Eingebaute Teile in allen Einheiten	Quantity recommended for commissioning Empfohlene Anzahl für Anfahrbetrieb Vendor / Lieferant Uhde Client / Kunde			Ordered / Bestellt	Delivery time (weeks) / Lieferzeit (Wochen)	Net weight per piece / set / Nettogewicht pro Stück / Satz kg	Price per piece/set / Preis pro Stück / Satz EU	Total / Gesamt Net weight / Nettogewicht kg Price / Preis EU		
		Gaskets & O rings							2 sets								
		Packing rings							2 sets								
		AF bearing							1 set								
		Elastic elements for coupling							2 sets								
REMARKS / BEMERKUNGEN			* Vendor should supplement any items in confirmation with their experience.														
														Σ	0,00	0,00	
Issue / Ausgestellt:			Approved/Freigabe			Rev.:			Rev.:								
Date / Datum:			Date / Datum:			Date / Datum:			Date / Datum			Date / Datum					
© 2006 Uhde GmbH												SPAREpartsLIST_D&E.xls					

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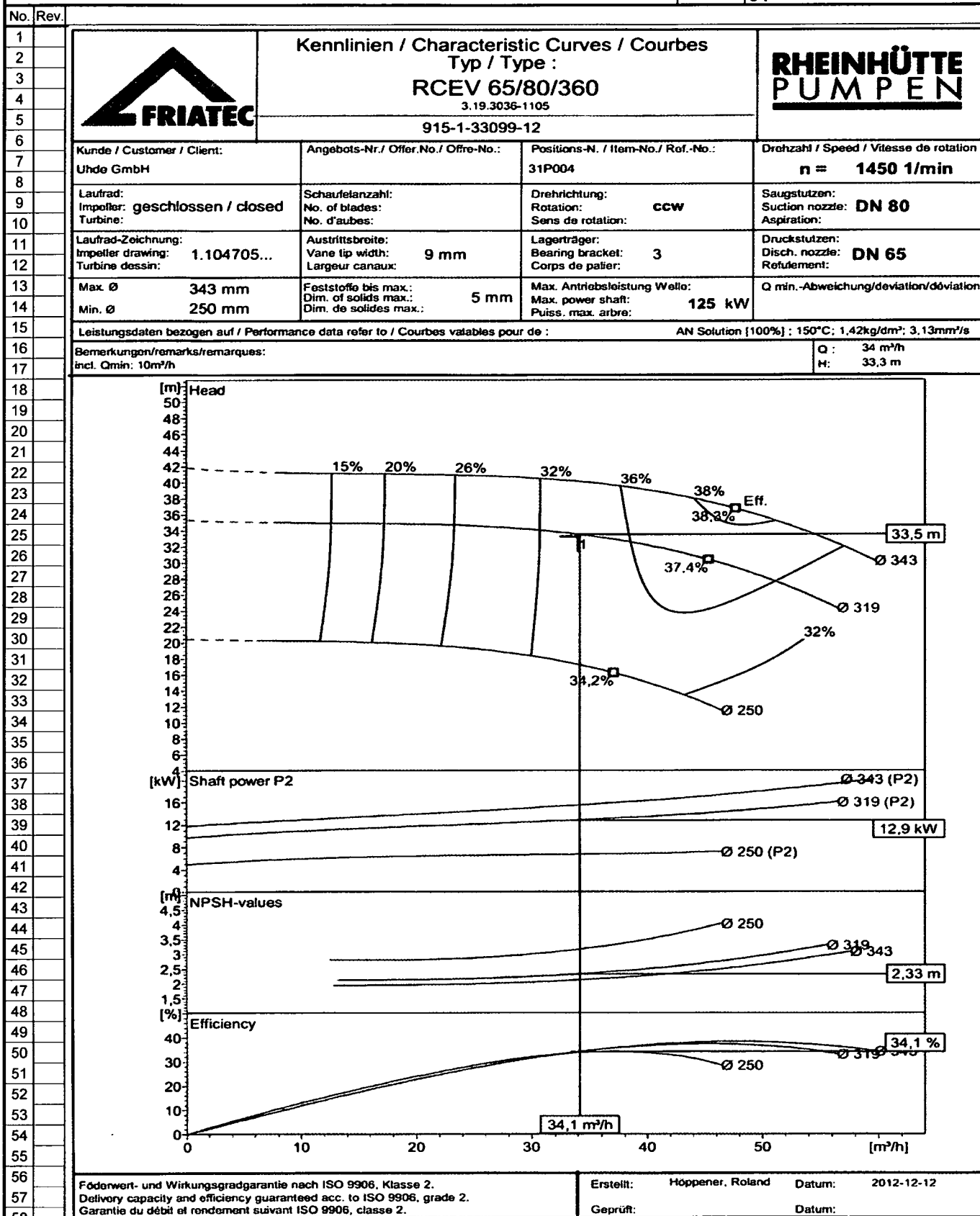
Uhde		Plant ANP	Customer MICCO	Code VINACOMIN	UAN 01-3166	Page 10
REMARKS AN Solution Pump					TON	31P004
					Item	
					Rev.	01
01	01	Remarks:				
		Remarks & Additional Design Criteria: 1) One pump installed, one pump in store! 2) No copper or copper alloy allowed. 3) No zinc is allowed. 4) No organic materials are allowed! 5) All aux. nozzles to be flanged not smaller than 1/2". 6) Vertical pump will be installed on a vessel tank flange. Pump manufacturer shall supply pump supporting plate 36" / ANSI B16.5 / 150# incl. bolts, nuts & washers. Material 1.4306 The vessel gasket will be supplied by Uhde. 7) No intermediate wet bearings are allowed. 8) Vertical pump speed shall not exceed 1500 rpm. 9) Pickling and passivating for all welding parts in contact with medium is required.				
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DATA SHEET CENTRIFUGAL PUMP PERFORMANCE CURVE

AN Solution Pump

TON 31P004
ITEM
REV. 01



REMARKS

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ThyssenKrupp Uhde		Plant ANP	Customer MICCO	Code VINACOMIN	UAN	01-3166	Page 12
DATA SHEET CENTRIFUGAL PUMP PID					TON	31P004	
AN Solution Pump					ITEM		
					REV.	01	
No.	Rev.	to be supplied by pump vendor with proposal					
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REMARKS							
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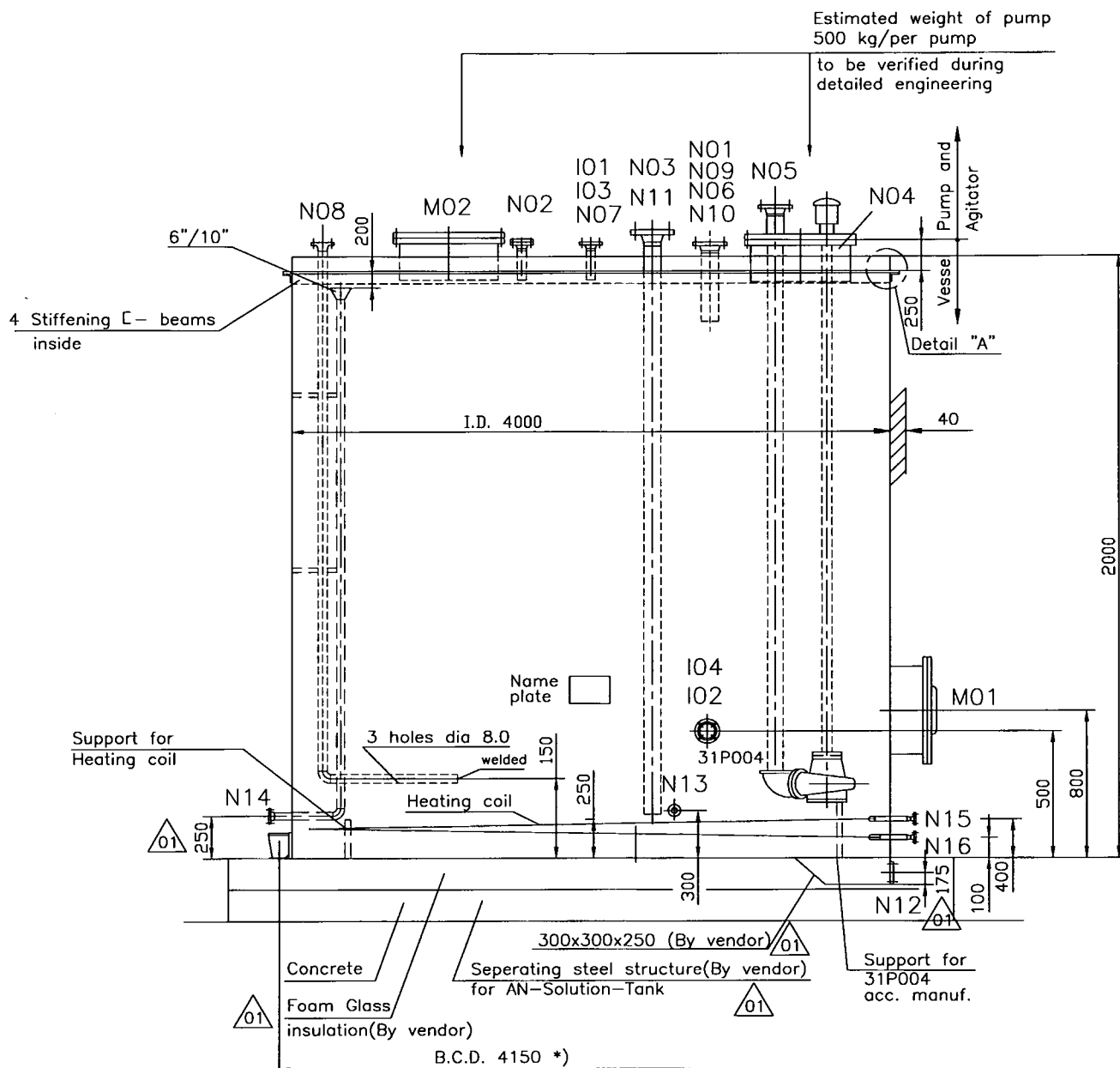
PRINCIPLE SKETCH AN SOLUTION TANK

AN Solution Pump

TON 31P004

Item

Rev. 01

PRINCIPLE SKETCH

*) To be verified by vendor.

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ThyssenKrupp Uhde		Plant ANP	Customer MICCO		Code VINACOMIN		UAN	01-3166	Page 14	
DATA SHEET CENTRIFUGAL PUMP INSPECTION / TESTS 1							TON	31P004		
AN Solution Pump							ITEM			
							REV.	01		
No. Rev.										
MATERIAL TESTS										
1	Material certificate acc.:		EN 10204: 3.1							
2					Inspection Code		Remarks			
3		Chemical analysis	Mechanical properties							
4										
5	Casing	3.1B	3.1B							
6	Impeller	3.1B	3.1B							
7	Inducer									
8	Shaft	3.1B	3.1B							
9	Shaft sleeve	3.1B	3.1B							
10	01 Wear rings									
11										
NON-DESTRUCTIVE TESTS										
12					Inspection Code		Remarks			
13		Magn.particle examination	Ultrasonic examination	Radiographic examination	Surface crack check	PMI				
14										
15	Casing									
16	Impeller									
17	Inducer									
18	Shaft									
19	Shaft sleeve									
20	Forging / bar stock									
21										
22					Definition acc. API 610, para. 3.38 and 3.64		Participation of Client			
23							Observed by Uhde			
24							Witnessed by Uhde			
25							Test / Inspection report required			
26							Manufacturer			
27										
TESTS/HYDROSTATIC / LEAK TEST						Test Pressure bar g				
28	01 Casing	suction	10	discharge	10		X	X		
29	01 Cooling components and jackets for bearings, seal, chamber and cooler		-							
30	01 Auxilliary process and utility piping		-	min. 1.5 x design						
31										
32	Leakage test									
33	Helium integral test for canned motor pumps									
34										
BALANCING										
35		Grade	ISO 1940-1							
36	Impeller	G 2.5			X	X				
37	Coupling (all parts)	G 2.5			X	X				
38	01 Complete rotor		N.A							
39										
PERFORMANCE TEST										
40	01 Performance test acc. to:	ISO 9906 KL.1								
41		Speed rpm								
42	01 Performance test	1450	with manuf. Shop motor!		X	X	X		X	
43	01 NPSH test	N.A								
44										
FINAL CHECKS										
45	Dismantling and inspection after test: mandatory for sleeve bearings; for other parts only if required							X	X	
46	Dimensional check							X	X	
47	Cleanliness prior to final assembly							X	X	
48	01 Visual inspection inside								X	X
49	Visual inspection outside							X	X	
50	Inspection of scope of supply							X	X	
51	Inspection of painting							X	X	
52	Check identification system for spare parts							X	X	
53	Inspection of packing							X	X	
54	Check of documentation							X	X	
55	Pump alignment check							X	X	
TESTS AND MEASUREMENTS incorporated in machinery test										
56	X	Vibration measurement	60							
57	X	Bearing temperature measurement	61							
58	X	Sound pressure level test (for reference)	62							
59										

ThyssenKrupp Uhde		Plant ANP	Customer MICCO		Code VINACOMIN		UAN		01-3166		Page 15	
NOISE DATA SHEET							TON		31P004			
AN Solution Pump							ITEM					
							REV.		01			
No. Rev.												
REQUIREMENTS												
1	The values are:		Sound pressure level			The given data are valid for the following operating conditions			Nor. operating point			
2												
3	Sound level dB(A)											
4	Frequency	Hz	63	125	250	500	1000	2000	4000	8000	Total	10 log S
5	Total scope of supply 1)											
6	Parts inst. inside the building											
7	Parts inst. outside the building											
8												
9	Acceptance testing acc. to		DIN 45635									
10	If the operating and environmental conditions do not allow to make an acceptance test according to the marked standard											
11	then a specified test procedure has to be suggested.											
EXPECTED SOUND LEVEL												
12	The values are:		Sound pressure level			The listed values are based on			Similar equipment			
13												
14	Data are valid for the following operating conditions		Nor. operating point			Noise characteristics			Continuous			
15												
16												
17												
EQUIPMENT WITHOUT NOISE REDUCTION FEATURES 1)												
18	Sound level dB(A)											
19	Frequency	Hz	63	125	250	500	1000	2000	4000	8000	Total	10 log S
20	Total scope of supply										85	
21	Parts inst. inside the building											
22	Parts inst. outside the building											
23	Compressor casing											
24	Pump casing											
25	Gear box											
26	Base frame											
27	In suction pipe, 1.stage											
28	In discharge pipe, last stage											
29	Intercoolers, separators											
30	Interconnecting piping											
31	Pulsation damper											
32	Oil system											
33												
34												
35												
EQUIPMENT WITH NOISE REDUCTION FEATURES												
36	Sound level dB(A)											
37	Frequency	Hz	63	125	250	500	1000	2000	4000	8000	Total	10 log S
38	Total scope of supply											
39	Parts inst. inside the building											
40	Parts inst. outside the building											
41	Compressor casing											
42	Turbine casing											
43	Gear											
44	Base frame											
45	In suction pipe, 1.stage											
46	In discharge pipe, last stage											
47	Intercoolers, separators											
48	Interconnecting piping											
49	Pulsation damper											
50	Oil system											
51												
52												
53	Description of noise reduction feature:											
REMARKS												
54	Row 20: incl. Electric motor and all tolerances.											
55												
56												
57												
58												
59												
60												
61												

