Fast-operating steam conditioning valve

ARTES VALVE & SERVICE

Client	Mildorf Partners Limited	ARTES-no.	5503049	
Project	Krasnodar	Pos.	2.1	
Item	BROU-VD	Units	4	
KKS-no.	11 LBK10 AA801, 12 LBK10 AA801, 21 LBK10 AA801 & 22 LBK10 AA801	Serial-no.	3130546.1, 3130546.2, 3130546.3 & 3130546.4	

Pipe connection data		Inlet	Outlet
Pipe	Ø D x s mm	273 x 25,5	720 x 24,0
Pipe material			

Valve information - connection data		Inlet	Outlet
Nominal size	DN	250	700
Nominal pressure	PN	250	16
Weld connection	Ø D x s mm	273 x 25,5	720 x 24,0
Material		1.7383	1.7383

Valve information - design data		Inlet	Outlet
Pressure	bar(g)	85	5
Temperature	°C	550	520

Test pressure - Hydrostatic shell test **175,0 bar(g)**

Operation data		Point	Point	Point	Point	Point
Fluid	**Steam**	1	2	3	4	5
Flowrate	t/h	115,15	230,30	234,40	230,30	
Temperature t1	°C	518,40	518,40	545,20	518,40	
Temperature t2	°C	200,00	200,00	200,00	200,00	
Pressure inlet	bar(a)	80,70	80,70	84,90	80,70	
Pressure outlet	bar(a)	6,00	6,00	6,00	6,00	
Noise level	dB(A)					
K_V value 1. step	m³/h	171,10	347,08	341,66	347,08	

Type of valve Angle Valve

Material		**Design of valve**		
Body	1.7383	Ø Seat	160	mm
Stem and		Ø Stem	65	mm
Perforated Cage	1.4922 nitrided	Pressure reduction steps	4+1	
Seat	1.7383 stellited	K_{VS}-value	400	m³/h
		Control Characteristic	linear	
Seal	Graphite, K80 + K80S	max. Δp actuator	84,9	bar
		Stroke	80	mm
		Length	cf. dimensional drawing	mm

Inspected acc. to Technical Requirements of the Customs Union
requirement AD2000
leakage EN1349-seat leackage VL2

Special rools

Actuator electrical 3130733
Model SIPOS Seven
2SA7364-2DE03-4BB4-Z
AC 3PH 380V-460V -10%/+15%
quick opening/closing time apr. 5,0 s
as required in inquiry

Remarks installation indoor
with integrated strainer, preheating and drainage connections Ø28 x 3 mm
100% NDT of weld ends

Revision	0	1	2	3	4	5
Date	02.12.2016	20.12.2016	21.12.2016	01.02.2017		
prepared	H. Roßmann	H. Jäkel	P. Schüler	P. Schüler		
checked	H. Jäkel	H. Roßmann	H. Jäkel	H. Jäkel		

Motive Steam Cooler

ARTES VALVE & SERVICE

1	Client	Mildorf Partners Limited			ARTES-no.	5503049	
2	Project	Krasnodar			Pos.	2.2	
3	Item	*part of BROU-VD*			Units	4	
4	KKS no.	*part of 11 LBK10 AA801, 12 LBK10 AA801,*			Serial-no.	*part of 3130546.1, 3130546.2,*	
5		*21 LBK10 AA801 & 22 LBK10 AA801*				*3130546.3 & 3130546.4*	
6	**Pipe connection data**				Motive Steam	Cooling Water	
7	Pipe	Ø D x s	mm		integrated	89,0 x 4,5	
8	Pipe material				--		
9	**Valve information - connection data**				Motive Steam	Cooling Water	
10	Nominal size	DN			--	80	
11	Nominal pressure	PN			--	100	
12	Weld connection	Ø D x s	mm		--	88,9 x 4,5	
13	Material				--	1.7383	
14	**Valve information - design data**				Motive Steam	Cooling Water	
15	Pressure		bar(g)		--	28	
16	Temperature		°C		--	520	
17							
18	**Operation data**			Point	Point	Point	Point
19				1	2	3	4
20	Fluid	**steam**					
21	Flowrate		t/h	115,15	230,30	234,40	230,30
22	Temperature t1 [1)]		°C	482,00	482,00	510,00	482,00
23	Temperature t2		°C	200,00	200,00	200,00	200,00
24	Pressure		bar(a)	6,00	6,00	6,00	6,00
25	Velocity		m/s	38,91	78,20	81,50	78,20
26	Fluid	**cooling water**					
27	Flowrate		t/h	25,11	51,40	59,50	51,40
28	Temperature		°C	30,00	45,00	65,00	45,00
29	Pressure Inlet		bar(a)	6,87	9,65	11,00	9,65
30	Pressure outlet		bar(a)	6,00	6,00	6,00	6,00
31	K_V value		m³/h	27,00	27,00	27,00	27,00
32							
33	Fluid	**Motive Steam**					
34	Flowrate		t/h			17,00	
35	Temperature [2)]		°C			531,00	
36	Pressure Inlet		bar(a)			49,40	
37	Pressure outlet		bar(a)			6,00	
38	K_V value		m³/h			38,20	
39							
40	**Type of valve**	Integrated Motive Steam Cooler					
41							
42	**Inspected acc. to**	Technical Requirements of the Customs Union					
43		requirement	AD2000				
44							
45	**Special rools**	Length of straight outflow pipe			7	m	
46		Min-Distance to the temperature sensor			10	m	
47	**Remarks**						
48	Motive steam cooler is an integrated part of the fast-operating steam conditioning valve						
49							
50							
51							
52	[1)] steam temperature after complete pressure reduction						
53	[2)] steam temperature after 1st pressure reduction step						

54	Revision	0	1	2	3	4	5
55	Date	02.12.2016	20.12.2016	01.02.2017			
56	prepared	H. Roßmann	H. Jäkel	P. Schüler			
57	checked	H. Jäkel	H. Roßmann	H. Jäkel			

Control Ball Valve

ARTES VALVE & SERVICE

Client	Mildorf Partners Limited	ARTES-no.	5503049	
Project	Krasnodar	Pos.	2.3	
Item		Units	4	
KKS-no.	11 LCE30 AA801, 12 LCE30 AA801, 21 LCE30 AA801 & 22 LCE30 AA801	Serial-no.	3130532.1, 3130532.2, 3130532.3 & 3130532.4	

Pipe connection data		Inlet	Outlet
Pipe	Ø D x s mm	89,0 x 4,5	89,0 x 4,5
Pipe material			

Valve information - connection data		Inlet	Outlet
Nominal size	DN	80	80
Nominal pressure	PN	40	40
Weld connection	Ø D x s mm	89,0 x 4,5	89,0 x 4,5
Material		1.0460	1.0460

Valve information - design data		Inlet	Outlet
Pressure	bar(g)	28	28
Temperature	°C	80	80

Test pressure - Hydrostatic shell test	**42,0 bar(g)**

Operation data		Point	Point	Point	Point	Point
Fluid	**cooling water**	1	2	3	4	5
Flowrate	t/h	25,11	51,40	59,50	51,40	
Temperature	°C	30,00	45,00	65,00	45,00	
Pressure inlet	bar(a)	13,00	13,00	26,00	26,00	
Pressure outlet	bar(a)	6,87	9,65	11,00	9,65	
K_V value	m³/h	14,37	39,90	21,90	18,10	

Type of valve RKH-G

Material		**Design of valve**		
Housing	1.0460	Ø Seat	65	mm
Stem	1.4122	Ø Stem	25	mm
Seat	1.4122 metallic seat	Pressure reduction steps	2	
Ball	1.4122 metallic seat	K_{VS}-value	50	m³/h
Control disc	1.4122 plasmanitrided	Characteristic curve	equal percentage	
Seal	O-ring, EPDM, perox.	max. Δp actuator	28	bar
		Length	500	mm

Inspected acc. to	Technical Requirements of the Customs Union
requirement	AD2000
leakage	EN1349-seat leackage VL2

Special rools

Actuator	electrical	3130734
Model	SIPOS Seven	
	2SA7321-5EE00-4BB4-Z with worm gear GS 63.3	
	AC 3PH 380V-460V -10%/+15%	
	quick opening/closing time apr. 5 s	
	as required in Inquiry	

Remarks
control disc is perforated
rangebility 50
Seatrings on both sides of the Ball

Revision	0	1	2	3	4	5
Date	02.12.2016	13.12.2016	20.12.2016	21.12.2016	01.02.2017	
prepared	H. Roßmann	H. Jäkel	H. Jäkel	P. Schüler	P. Schüler	
checked	H. Jäkel	H. Roßmann	H. Roßmann	H. Jäkel	H. Jäkel	