Control Valve

ARTES Valve & Service GmbH
Parkallee 7 - 16727 Velten
GERMANY

A MEMBER OF THE ARCA FLOW GROUP

1	Customer:	Richard Kablitz GmbH	ARTES-ref.-no.:	5504246
2	Plant:	Bihov	Pos.:	11.1
3	Location:	MDU	Qty.:	1
4	TAG No.:	1 LBG10 AA101	S/N:	3168077.1

	Pipe - Connection Data		**Inlet**	**Outlet**
6	Dimensions	ØD [mm] x s [mm]	60,3 x 5,0	273,0 x 6,3
7	Material		1.7380 (10CrMo9-10)	1.7335 (13CrMo4-5)
8	Welding Connection	ØD [mm] x s [mm]	60,3 x 5,0	273,0 x 6,3
9	Flange Connection		--	--

	Valve - Design		**Inlet**	**Outlet**
11	Nominal Size	DN / NPS	50	250
12	Nominal Pressure	PN / class	--	--
13	Design Pressure	*bar(g)*	102	15
14	Design Temperature	*°C*	530	250
15	Material		1.7380/1.7383 (10CrMo9-10/11CrMo9-10)	1.7335 (13CrMo4-5)

	Operation Data		**Loading Case**	**Loading Case**	**Loading Case**	**Loading Case**	**Loading Case**	**Loading Case**
17	Medium :	Water/Steam	**1**	**2**	**3**	**4**	**5**	**6**
18	Phase		steam	steam	steam			
19	Flowrate	*t/h*	5,50	4,25	1,50			
20	Temperature, Inlet	*°C*	495,00	495,00	495,00			
21	Pressure, Inlet	*barA*	85,00	85,00	85,00			
22	Pressure, Outlet	*barA*	2,60	2,60	2,60			
23	kv	*m³/h*	8,95	7,15	2,67			
24								
25	Sound Pressure Level [1]	*db(A)*	85	85	76			

Type Of Valve **Angle Valve**

	Valve Parameter		
28	Seat Diameter:	35	mm
29	Pressure Reduction Steps, controlled:	2	
30	Pressure Reduction Steps, fix:	1	
31	K_{VS}-value	11,5	m³/h
32	Control Characteristic:	linear	
33	Stroke:	26	mm
34	max. Dp for Actuator:	85	bar
35	Installation Length:	380/180	mm

	Material	
28	Body:	1.7380/1.7383 (10CrMo9-10/11CrMo9-10)
29	Seat:	1.7380/1.7383 (10CrMo9-10/11CrMo9-10), stellited
30	Stem with Holecage:	1.4923 (X22CrMoV12-1), nitrided
33	Seals:	Graphite
34	Packing:	Graphite K80/K80S

Design / Inspection

Requirements acc. to: EN 12952
Leakage Class: 0,5% of K_{VS}-value

Final Inspection Confirmation acc. to DIN EN 10204 **3.1**

Actuator pneumatic 3168580

Type: ARCA - diaphragm actuator UMA III 811-2042D-Ö BH, single acting, air opens, spring closes, Fail-Safe - closed
Positioner: Siemens Sipart PS2 - 6DR5011-0NG21-0AA1, incl. Iy-Module for position feedback (4 ... 20mA)
2 inductive limit switches; gauge block; solenoid valve Bückert 24VDC 3/2 way, filter regulator Festo
Type: LFR-N1/4-D-5M-O-MIDI-T3-EX4, volume booster YTC YT-300 with 2 one-way flow control valves for
a positioning time of approx. 2 sec. in both directions

Remarks

[1] - sound insulation at least *130,0 mm* thick, without rigid spacers

Installation position - stem with holecage horizontal, flow from above, drainage at 6:00 o'clock position
"Piston Release Design"

54	Revision	0	1	2	3	4	5	6
55	Date:	11.06.2021	11.10.2021	08.11.2021				
56	Prepared:	F. Lange	P. Schüler	P. Schüler				
57	Checked:	P. Schüler	R. Feldmann	R. Feldmann				

Motive Steam Cooler

ARTES Valve & Service GmbH
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GERMANY

A MEMBER OF THE ARCA FLOW GROUP

1	Customer:	Richard Kablitz GmbH		ARTES-ref.-no.:	5504246		
2	Plant:	Bihov		Pos.:	11.2		
3	Location:	MDU		Qty.:	1		
4	TAG No.:	(1 LBG10 AA101)		S/N:	(3168077.1)		
5	**Pipe - Connection Data**			**Motive Steam**	**Cooling Water**	**Steam Pipe**	
6	Dimensions	ØD [mm] x s [mm]		internal	33,7 x 3,2	273,0 x 6,3	
7	Material						
8	**Motive Steam Cooler - Connection Data**			**Motive Steam**	**Cooling Water**	**Steam Pipe**	
9	Nominal Size	DN / NPS		--	25	--	
10	Nominal Pressure	PN / class		--	--	--	
11	Design Pressure	*bar(g)*		--	105	--	
12	Design Temperature	*°C*		--	125	--	
13	Material			--	1.7380/1.7383	--	
14	Welding Connection	ØD [mm] x s [mm]		--	x	--	
15	Flange Connection			--	--	--	
16							
17	**Operation Data**						
18			**Loading Case**	**Loading Case**	**Loading Case**	**Loading Case**	**Loading Case**
19			**1**	**2**	**3**	**4**	**5**
20	Medium:	steam					
21	Flowrate	*t/h*	5,50	4,25	1,50		
22	Temperatur, Inlet	*°C*	450,0	450,0	450,0		
23	Temperatur, Outlet	*°C*	1337,0	133,7	133,7		
24	Pressure	*barA*	2,60	2,60	2,60		
25	Flow Speed	*m/s*	26,30 *1)*	20,30	7,20		
26							
27	Medium:	water					
28	Flowrate	*t/h*	1,59	1,23	0,43		
29	Temperature	*°C*	115	115	115		
30	Pressure, Inlet	*barA*	17,50	11,70	3,75		
31	Pressure, Outlet	*barA*	2,60	2,60	2,60		
32	Flow Speed	*m/s*	0,80	0,60	0,20		
33	kv	*m³/h*	0,42	0,42	0,42		
34							
35	Medium:	motive steam					
36	Flowrate	*t/h*	0,48				
37	Temperatur, Inlet	*°C*	459,79	458,81	457,43		
38	Pressure, Inlet	*barA*	19,00	17,30	15,10		
39	Pressure, Outlet	*barA*	2,60	2,60	2,60		
40	kv	*m³/h*	2,92	2,92	2,92		
41							
42	**Type Of Valve**		**Motive Steam Cooler - Type 3**				
43	**Design / Inspection**						
44		Requirements acc. to:	EN 12952				
45	**Mounting Instruction**						
46			Length of straight outflow pipe		≥ 5,0 m		
47			Min-Distance to the temperature sensor		8,0 m		
48	**Remarks**						
49	*1)* - flow speed "hot" => *37,2 m/s*						
50							
51							
52							
53	- internal motive steam extraction						
54	The motive steam cooler is part of the control valve - *1 LBG10 AA101*!						

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56	Date:	11.06.2021	11.10.2021					
57	Prepared:	F. Lange	P. Schüler					
58	Checked:	P. Schüler	R. Feldmann					

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1	Customer:	Richard Kablitz GmbH	ARTES-ref.-no.:	5504246
2	Plant:	Bihov	Pos.:	11.3
3	Location:	injection water control valve - MDU	Qty.:	1
4	TAG No.:	1 LAE60 AA005	S/N:	3168080.1

5	**Pipe - Connection Data**		**Inlet**			**Outlet**		
6	Dimensions	ØD [mm] x s [mm]	33,7	x	3,2	33,7	x	3,2
7	Material		1.0425 (P265GH)			1.0425 (P265GH)		
8	Welding Connection	ØD [mm] x s [mm]	33,7	x	3,2	33,7	x	3,2
9	Flange Connection		--			--		

10	**Valve - Design**		**Inlet**	**Outlet**
11	Nominal Size	DN / NPS	25	25
12	Nominal Pressure	PN / class	--	--
13	Design Pressure	*bar(g)*	40	40
14	Design Temperature	*°C*	125	125
15	Material		1.0460 (P250GH, C22.8)	1.0460 (P250GH, C22.8)

16	**Operation Data**		**Loading Case**	**Loading Case**	**Loading Case**	**Loading Case**	**Loading Case**	**Loading Case**
17	Medium :	Water/Steam	**1**	**2**	**3**	**4**	**5**	**6**
18	Phase		water	water	water			
19	Flowrate	*t/h*	1,59	1,23	0,43			
20	Temperature, Inlet	*°C*	115,00	115,00	115,00			
21	Pressure, Inlet	*barA*	27,00	27,00	27,00			
22	Pressure, Outlet	*barA*	17,50	11,70	3,75			
23	kvs	*m³/h*	0,53	0,32	0,09			
24	Flow Speed, Outlet	*m/s*	0,80	0,62	0,22			

25 **Type Of Valve** **Control Ball Valve Type GW**

26	**Valve Parameter**			**Material**	
27	Seat Diameter:	25	mm	Body:	1.0460 (P250GH, C22.8)
28	Pressure Reduction Steps, controlled:	1		Seatring:	1.4122 (X39CrMo17-1), metal sealing
29	Pressure Reduction Steps, fix:	0		Ball:	1.4122 (X39CrMo17-1), metal sealing
30	kvs	0,75	m³/h	Control disc:	1.4122 (X39CrMo17-1), hardened
31	Control Characteristic:	equal perc. mod.		Seals:	O-Rings, EPDM perox.
32	max. Dp for Actuator:	30	bar		
33	Installation Length:	190	mm		
34					

35	**Design / Inspection**	**Final Inspection Confirmation acc. to DIN EN 10204** **3.1**
36		
37	Requirements acc. to: EN 12952	
38	Leakage Class: 0,01% of kvs-Value	
39		

40	**Actuator**	pneumatic 3169373
41	Type:	ProtACT PR216S.10.090.14S36.PRH, single-acting, spring closes
42		Positioner: Siemens Sipart PS2 - 6DR5011-0NG21-0AA1, incl. ly-Module for position feedback (4 ... 20mA)
43		Typeee: 6DR4004-8J; incl. liwithout transwithoutter SIA-Module; inductive liwithout switches; incl.gauge block made of plastic
44		aluminium block, filter regulator SMC AW30-F02G-B 1/4" incl. pressure gauge
45		completely piped in stainless steel, air supply: 5,0 bar(g)
46	**Actuatoradaption:**	EN ISO 5211 - F14 - square 36 mm

47 **Remarks**

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50
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52 - design with 2 seat rings

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55	Prepared:	F. Lange	P. Schüler					
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