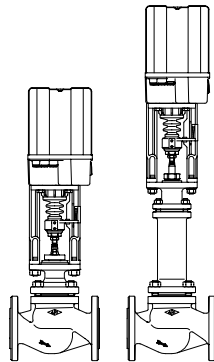


## Straight through control valve with post guided plug

1" to 8"

### STEVI® 470 / 471 - ANSI Electric actuator ARI-PREMIO

- Enclosure IP 65
- 2 torque switches
- 1 travel switch
- Handwheel
- Additional devices available, e.g. potentiometer



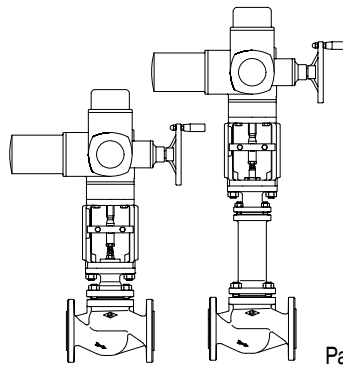
Page 2



Fig. 470 - ANSI

### STEVI® 470 / 471 - ANSI Electric actuator AUMA SAR

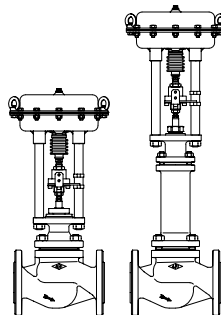
- Electric multiturn actuator capable of high closing pressures
- Enclosure IP 67
- 2 torque switches
- 2 travel switches
- Handwheel
- Overheating protection for motor as standard
- Additional devices available, e.g. potentiometer
- Explosion proof execution available



Page 4

### STEVI® 470 / 471 - ANSI Pneumatic actuator DP32 - DP34

- Reversible pneumatic actuator
- Actuator with rolling diaphragm
- Air supply pressure max. 87 psi
- Stem protection by bellow
- Maintenance-free O-ring sealing
- Assembly of additional devices acc. to DIN IEC 60534-6



Page 6

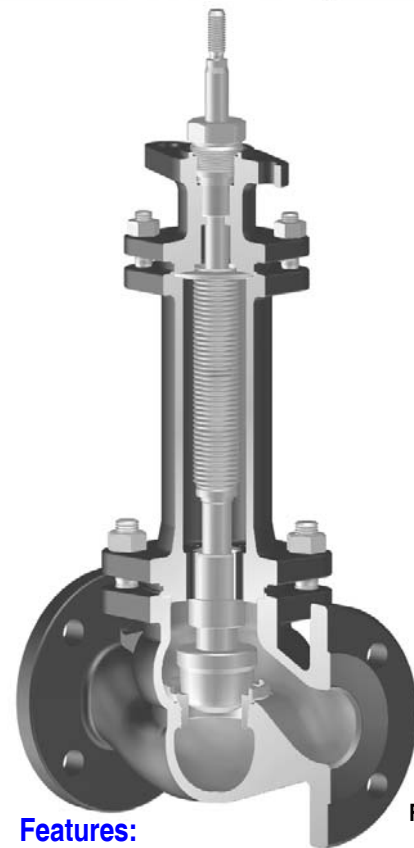
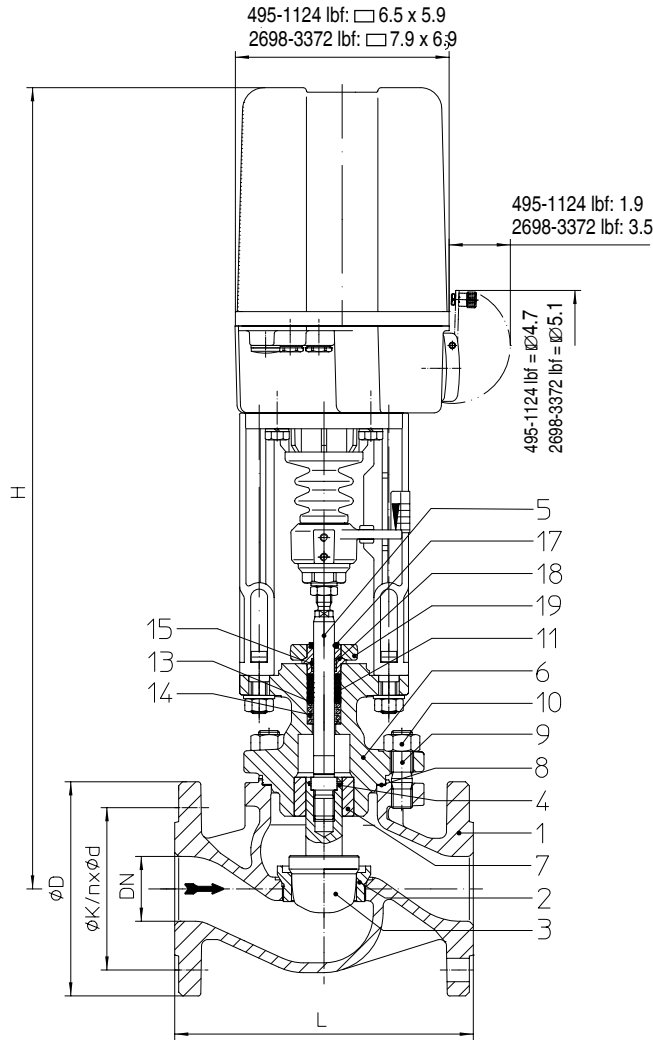


Fig. 471 - ANSI

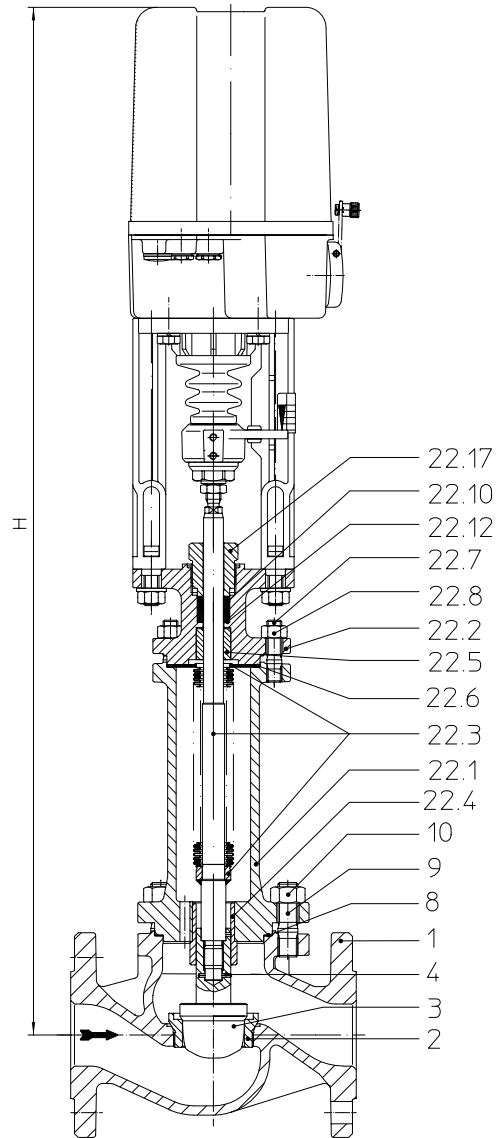
### Features:

- Compact design
- Precision guided stem
- Burnished stem
- Tapered seat joint
- Replaceable seat ring and plug
- Threaded seat ring
- Cv-values reducible up to 6 times
- Rangeability 50 : 1 (1"-6")  
30 : 1 (8")
- Post guided plug
- Spring loaded PTFE-V-ring packing unit
- Two-ply bellows seal
- Travel indicator

(Material and Figure-No. refer to technical data or part list.)



**Fig. 470 - ANSI**



**Fig. 471 - ANSI**

**Heights and weights**

Size		1"	1 1/2"	2"	3"	4"	6"	8"
...470	H (in)	23.1	24.3	24.3	25.5	25.6	28.8	31.1
	495 lbf (lb)	35.1	52.7	57.1	101.2	157	292	
	1124 lbf (lb)	37.5	55.1	59.5	103.6	160	294	497
	H (in)		30.2	30.2	31.4	31.5	34.6	37.5
	2698 lbf (lb)		63.9	68.4	112.5	169	303	506
	3372 lbf (lb)							
...471	H (in)	29.3	32.6	32.6	33.3	34.5	41.7	50
	495 lbf (lb)	41.2	62	66.4	114.4	165	310	
	1124 lbf (lb)	43.7	64.4	68.8	116.9	167	312	522
	H (in)		38.5	38.5	39.3	40.4	47.5	56.4
	2698 lbf (lb)		73.2	77.6	125.7	176	321	530
	3372 lbf (lb)							

Other dimensions refer to page 12.

**max. permissible closing pressures** for parabolic plug on flow to open  $P_2 = 0$

(Observe pressure-temperature-limits on page 13. Plug design acc. to „Selection of flow restrictors“, refer to page 13.)

Size		1"					1 1/2"		2"			3"			4"			6"			8"					
Standard <sup>3)</sup> Cv-values	Seat-Ø (in)						0.98			1.57			1.97			3.15			3.94			5.91			7.87	
	Cv-value						12			29			46			116			185			462			728	
	Travel (in)						0.79			1.18			1.18			1.18			1.18			1.97			2.56	
Reduced Cv-values	Seat-Ø (in)	0.12	0.2	0.47	0.71	0.87	0.98	1.26		1.26	1.57		1.97	2.56		2.56	3.15		3.94	4.92		4.92	5.91			
	Cv-value	0.29 0.18 0.12	0.73 0.46	2.9 1.8 1.2	4.6	7.3		12	18		18	29		46	73		73	116		185	289		289	462		
	Travel (in)	0.79	0.79	0.79	0.79	0.79	0.79	0.79		0.79	1.18		1.18	1.18		1.18	1.18		1.18	1.97		1.97	1.97		1.97	
Actuator <sup>1)</sup> <b>ARI-PREMIO</b> 495 lbf	Closing pressure (psi)	I.	740	740	740	740	677	521	510	306	191	306	191	117	116	64	39	64	39	22	22					
		II.	740	740	740	740	634	488	466	279	173	279	173	106	103	56	34	56	34	19	19					
		III.	461	457	442	430	421	415	415	262	162	262	162	99	99	54	32	54	32	18	15					
	Operating time <sup>2)</sup> (s)								53		53	79	53	79		79		79		79						
Actuator <sup>1)</sup> <b>ARI-PREMIO</b> 1124 lbf	Closing pressure (psi)	I.						740	740	740	740	502	740	502	318	316	183	118	183	118	73	73	45	29		
		II.						740	740	740	740	484	740	484	306	303	176	113	176	113	70	70	42	28	40	26
		III.	580	580	580	580	580	580	580	580	473	580	473	299	299	173	111	173	111	69	66	40	26	40	26	
	Operating time <sup>2)</sup> (s)								53		53	79	53	79		79		79		79		132		132	171	
Actuator <sup>1)</sup> <b>ARI-PREMIO</b> 2698 lbf	Closing pressure (psi)	I.									740		740	740	740	482	316	482	316	200	200	126	86			
		II.									740		740	740	740	474	311	474	311	197	197	124	85	121	83	45
		III.									580		580	580	580	472	309	472	309	196	193	122	83	122	83	45
	Operating time <sup>2)</sup> (s)										38		38		38		38		38		38		63		63	82
Actuator <sup>1)</sup> <b>ARI-PREMIO</b> 3372 lbf	Closing pressure (psi)	I.														610	401	610	401	255	255	161	111			
		II.														602	396	602	396	252	252	159	109	156	107	59
		III.														580	394	580	394	250	248	157	107	157	107	59
	Operating time <sup>2)</sup> (s)															79		79		79		132		132	171	
<b>I. Fig. 470: PTFE-V-ring unit</b>					<b>II. Fig. 470: PTFE - / pure graphite-packing</b>										<b>III. Fig. 471: Bellows seal</b>											

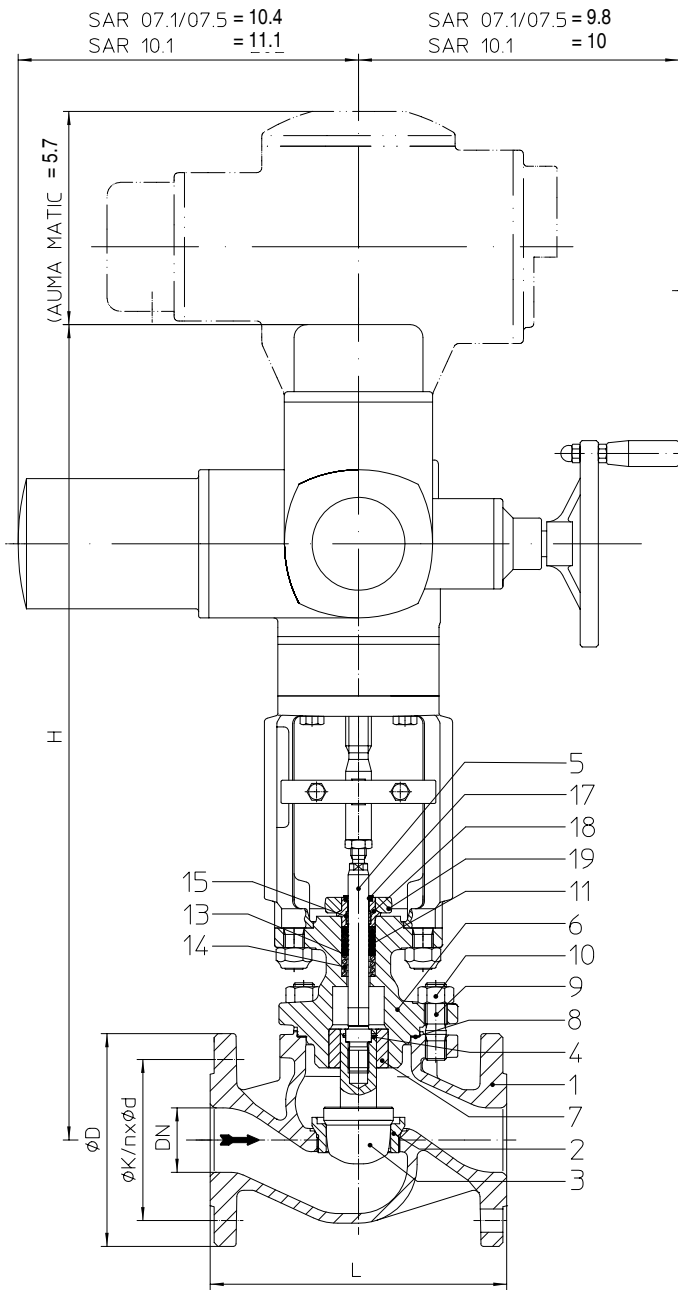
<sup>1)</sup> Motor voltage: 230V 50/60Hz  
24V 50/60Hz; 115V 50/60Hz

Technical data for actuator refer to data sheet ARI-PREMIO

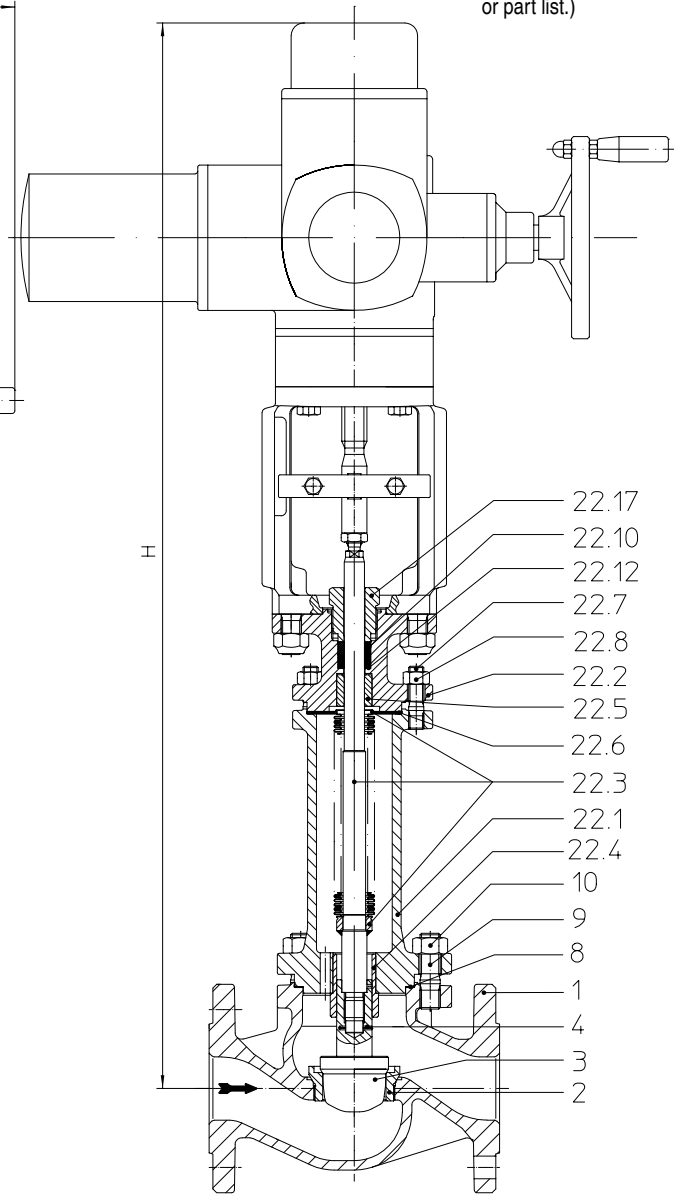
<sup>2)</sup> Indicated operating times with 50 Hz.

<sup>3)</sup> Not for perforated plug (presentation refer to page 13). Please find the Cv-values on page 13.

(Material and Figure-No. refer to technical data or part list.)



**Fig. 470 - ANSI**



**Fig. 471 - ANSI**

### Heights and weights

Size		1 1/2"	2"	3"	4"	6"	8"	
...470	H (in)	25.9	25.9	27	27.1	29.5	33.2	
	SAR 07.1	(lb)	98.8	106.5	150.6	207	341	
	SAR 07.5							
	H (in)			27.5	27.6	30	33.7	
	SAR 10.1	(lb)			160.5	217	351	554
	H (in)						35	36.7
SAR 14.1	(lb)					426	629	
...471	H (in)	34.2	34.2	34.9	36.1	42.4	50.7	
	SAR 07.1	(lb)	108	115.8	163.8	214	359	
	SAR 07.5							
	H (in)			35.4	36.6	42.8	51.2	
SAR 10.1	(lb)			173.8	224	369	587	

Other dimensions refer to page 12.

(For execution with AUMA SAR Ex other heights.)

max. permissible closing pressures for parabolic plug on flow-to-open  $P_2 = 0$

(Observe pressure-temperature-limits on page 13. Plug design acc. to „Selection of flow restrictors“, refer to page 13.)

**Fig. 470 - ANSI**

Size		1 1/2"			2"			3"			4"			6"			8"				
Standard <sup>3)</sup> Cv-values	Seat-Ø (in)			1.57			1.97			3.15			3.94			5.91			7.87		
	Cv-value			29			46			116			185			462			728		
	Travel (in)			1.18			1.18			1.18			1.18			1.97			2.56		
Reduced Cv-values	Seat-Ø (in)	0.98	1.26		1.26	1.57		1.97	2.56		2.56	3.15		3.94	4.92		4.92	5.91			
	Cv-value	12	18		18	29		46	73		73	116		185	289		289	462			
	Travel (in)	0.79	0.79		0.79	1.18		1.18	1.18		1.18	1.18		1.18	1.97		1.97	1.97			
Actuator <sup>1)</sup> <b>AUMA</b> <b>SAR 07.1</b> Output drive. Form A TR 20 x 4	Closing pressure (psi)	shut off	740	740	740	740	740	740	740	673	443	673	443	282							
		controlling	740	740	740	740	740	545	542	318	207	318	207	130							
	Torque (ft lbf)	22																			
	Operating time <sup>2)</sup> (s)	54	56	54	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56		
	Output drive (rpm)	5.6	8	5.6	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8		
Actuator <sup>1)</sup> <b>AUMA</b> <b>SAR 07.5</b> Output drive Form A TR 26 x 5	Closing pressure (psi)	shut off							740	740	740	624	740	624	398	398	253	175	251	173	96
		controlling							740	740	455	298	455	298	189	189	119	81	116	79	43
	Torque (ft lbf)	33																			
	Operating time <sup>2)</sup> (s)								64	64	64	64	64	64	64	64	55	55	55	71	
	Output drive (rpm)								5.6	5.6	5.6	5.6	5.6	5.6	5.6	11	11	11	11		
Actuator <sup>1)</sup> <b>AUMA</b> <b>SAR 10.1</b> Output drive Form A TR 26 x 5	Closing pressure (psi)	shut off							740	733	740	733	468	678	433	300	520	360	301		
		controlling							740	624	740	624	398	398	253	175	251	173	96		
	Torque (ft lbf)	52																			
	Operating time <sup>2)</sup> (s)								64	64	64	64	64	64	64	55	55	55	71		
	Output drive (rpm)								5.6	5.6	5.6	5.6	5.6	5.6	11	11	11	11			
Actuator <sup>1)</sup> <b>AUMA</b> <b>SAR 14.1</b> Output drive Form A TR 30 x 6	Closing pressure (psi)	shut off	<b>Closing pressures valid for PTFE-V-ring unit and PTFE- / pure graphite-packing.</b>												740	619	429	619	429	240	
		controlling													656	419	290	419	290	162	
	Torque (ft lbf)	129																			
	Operating time <sup>2)</sup> (s)														38	45	45	59			
	Output drive (rpm)														8	11	11	11			

**Fig. 471 - ANSI**

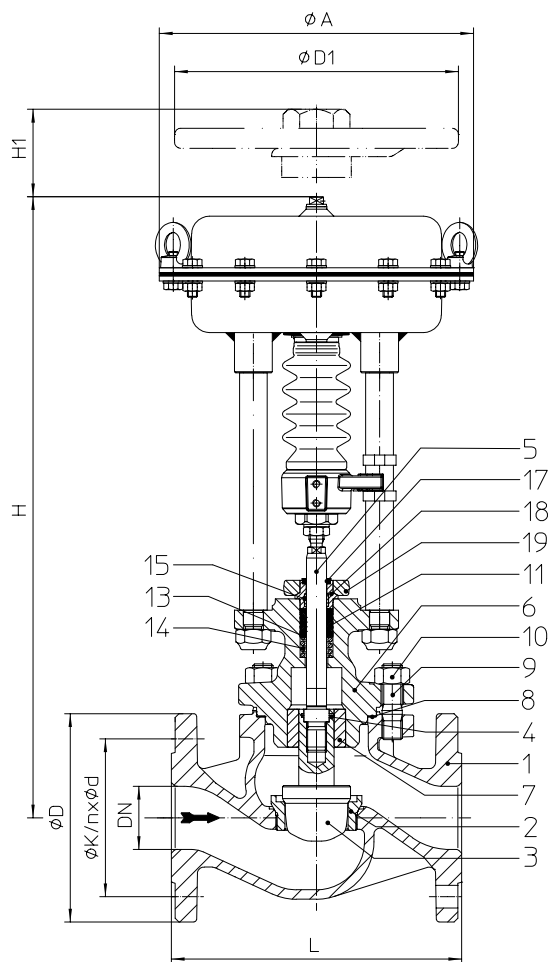
Size		1 1/2"			2"			3"			4"			6"			8"				
Standard <sup>3)</sup> Cv-values	Seat-Ø (in)			1.57			1.97			3.15			3.94			5.91			7.87		
	Cv-value			29			46			116			185			462			728		
	Travel (in)			1.18			1.18			1.18			1.18			1.97			2.56		
Reduced Cv-values	Seat-Ø (in)	0.98	1.26		1.26	1.57		1.97	2.56		2.56	3.15		3.94	4.92		4.92	5.91			
	Cv-value	12	18		18	29		46	73		73	116		185	289		289	462			
	Travel (in)	0.79	0.79		0.79	1.18		1.18	1.18		1.18	1.18		1.18	1.97		1.97	1.97			
Actuator <sup>1)</sup> <b>AUMA</b> <b>SAR 07.1</b> Output drive. Form A TR 20 x 4	Closing pressure (psi)	shut off	580	580	580	580	580	580	580	580	441	580	441	281							
		controlling	580	580	580	580	580	538	538	206	315	315	206	129							
	Torque (ft lbf)	22																			
	Operating time <sup>2)</sup> (s)	54	56	54	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56		
	Output drive (rpm)	5.6	8	5.6	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8		
Actuator <sup>1)</sup> <b>AUMA</b> <b>SAR 07.5</b> Output drive Form A TR 26 x 5	Closing pressure (psi)	shut off							580	580	580	580	580	580	397	395	251	173	251	173	96
		controlling							580	580	452	296	452	296	188	185	116	79	116	79	43
	Torque (ft lbf)	33																			
	Operating time <sup>2)</sup> (s)								64	64	64	64	64	64	64	55	55	55	71		
	Output drive (rpm)								5.6	5.6	5.6	5.6	5.6	5.6	11	11	11	11			
Actuator <sup>1)</sup> <b>AUMA</b> <b>SAR 10.1</b> Output drive Form A TR 26 x 5	Closing pressure (psi)	shut off	<b>Closing pressures valid for design with bellows seal.</b>												580	430	298	430	298	166	
		controlling	<b>Higher closing pressures for 6" in connection with AUMA SAR 14.1 on request.</b>												580	430	298	430	298	166	
	Torque (ft lbf)	52																			
	Operating time <sup>2)</sup> (s)								64	64	64	64	64	64	64	55	55	55	71		
	Output drive (rpm)								5.6	5.6	5.6	5.6	5.6	5.6	11	11	11	11			

1) Motor voltage: 400V 50Hz 3~ (other voltages on request)

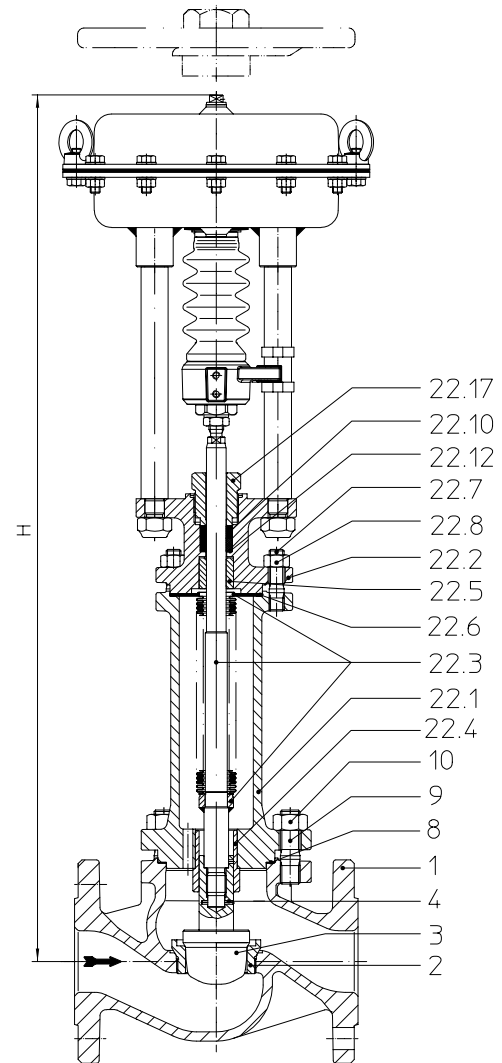
2) Indicated operating times with 50 Hz

3) Not for perforated plug (presentation refer to page 13). Please find the Cv-values on page 11.

(Material and Figure-No.  
refer to technical data  
or part list.)



**Fig. 470 - ANSI**



**Fig. 471 - ANSI**

**Heights and weights**

Size		1"	1 1/2"	2"	3"	4"	6"	8"	
DP 32	∅ A (in)	9.8							
	...470 H (in)	18.6	19.8	19.8	20.6	20.6	23		
		(lb)	43	60.6	65	109.1	165	300	
	...471 H (in)	24.8	28.1	28.1	28.4	29.6	35.9		
		(lb)	49.2	69.9	74.3	122.4	173	318	
	DP 33	∅ A (in)	11.8						
...470 H (in)		20.8	22	22	23.1	23.2	25.6		
		(lb)	56.2	73.9	78.3	122.4	179	313	
...471 H (in)		27	30.3	30.3	31	32.2	38.5		
		(lb)	62.4	83.1	87.5	135.6	186	331	
DP 34		∅ A (in)	15.9						
	...470 H (in)		27.3	27.3	28.5	28.5	30.9	33.2	
		(lb)		140	144.4	188.5	245	379	582
	...471 H (in)		35.6	35.6	36.3	37.5	43.8	49.3	
		(lb)		149.3	153.7	201.8	252	397	606

Other dimensions refer to page 12.

**Top mounted handwheel**

Technical data for actuator refer to data sheet DP32-34T

Type of actuator		DP 32	DP 33	DP 34
∅ D1 (in)		8.9	11.8	15.7
H1 (in)		10.6	11.2	17.4
Weight (lb)		11.3	17.6	37.5

**max. permissible closing pressures** for parabolic plug on flow-to-open  $P_2 = 0$ 

(Observe pressure-temperature-limits on page 13. Plug design acc. to „Selection of flow restrictors“, refer to page 13.)

**Spring closes on air failure**

Size		1"						1 1/2"		2"		3"		4"		6"									
Standard <sup>2)</sup> Cv-values	Seat-Ø (in)						0.98			1.57			1.97			3.15			3.94			5.91			
	Cv-value						12			29			46			116			185			462			
	Travel (in)						0.79			1.18			1.18			1.18			1.18			1.97			
Reduced Cv-values	Seat-Ø (in)	0.12	0.2	0.47	0.71	0.87		0.98	1.26		1.26	1.57		1.97	2.56		2.56	3.15		3.94	4.92				
	Cv-value	0.29 0.18 0.12	0.73 0.46	2.9 1.8 1.2	4.6	7.3		12	18		18	29		46	73		73	116		185	289				
	Travel (in)	0.79	0.79	0.79	0.79	0.79		0.79	0.79		0.79	1.18		1.18	1.18		1.18	1.18		1.18	1.97				
Actuator DP 32	Control signal (psi)	Air supply pressure min. (psi)	3 - 15	I.	444	423	308	118	69	47	36														
				II.	290	269	173	55	26	14															
				III.																					
			6 - 17	I.	740	740	740	374	243	183	172	97	55	97	55	30	29								
				II.	740	740	724	311	200	150	128	69	38	69	38	19	16								
				III.	141	137	122	109	101	95	95	52	27	52	27										
	12 - 35	I.				740	592	455	444	265	164	265	164	100	99	54	32	54	32	18	18				
		II.				740	740	549	422	399	238	146	238	146	89	86	46	27	46	27	15	15			
		III.	398	394	379	367	358	352	352	220	135	220	135	82	82	44	25	44	25						
	22 - 36	I.					740	740	740	559		559													
		II.					740	740	740	532		532													
		III.	580	580	580	580	580	580	580	515		515													
29 - 48	I.								740		740														
	II.								740		740														
	III.								580		580														
Actuator DP 33	Control signal (psi)	Air supply pressure min. (psi)	3 - 15	I.	740 <sup>c)</sup>	740 <sup>c)</sup>	634 <sup>c)</sup>	269 <sup>c)</sup>	172 <sup>c)</sup>	128 <sup>c)</sup>	116 <sup>a)</sup>	62 <sup>a)</sup>	33 <sup>a)</sup>	62 <sup>a)</sup>	33 <sup>a)</sup>	16 <sup>a)</sup>	14								
				II.	662 <sup>c)</sup>	641 <sup>c)</sup>	499 <sup>c)</sup>	207 <sup>c)</sup>	129 <sup>c)</sup>	94 <sup>c)</sup>	72 <sup>a)</sup>	35 <sup>a)</sup>	16 <sup>a)</sup>	35 <sup>a)</sup>	16 <sup>a)</sup>										
				III.	88 <sup>a)</sup>	84 <sup>a)</sup>	69 <sup>a)</sup>	57 <sup>a)</sup>	48 <sup>a)</sup>	42 <sup>a)</sup>	42 <sup>a)</sup>	18 <sup>a)</sup>		18 <sup>a)</sup>											
			6 - 17	I.			740 <sup>c)</sup>	580 <sup>c)</sup>	449 <sup>c)</sup>	344 <sup>c)</sup>	333 <sup>a)</sup>	196 <sup>a)</sup>	120 <sup>a)</sup>	196 <sup>a)</sup>	120 <sup>a)</sup>	72 <sup>a)</sup>	70	37	21	37	21				
				II.	740 <sup>c)</sup>	740 <sup>c)</sup>	740 <sup>c)</sup>	580 <sup>c)</sup>	407 <sup>c)</sup>	311 <sup>c)</sup>	288 <sup>a)</sup>	169 <sup>a)</sup>	102 <sup>a)</sup>	169 <sup>a)</sup>	102 <sup>a)</sup>	60 <sup>a)</sup>	57	29	16	29	16				
				III.	293 <sup>a)</sup>	289 <sup>a)</sup>	274 <sup>a)</sup>	262 <sup>a)</sup>	253 <sup>a)</sup>	247 <sup>a)</sup>	247 <sup>a)</sup>	152 <sup>a)</sup>	91 <sup>a)</sup>	152 <sup>a)</sup>	91 <sup>a)</sup>	53 <sup>a)</sup>	53	26	14	26	14				
			12 - 35	I.				740 <sup>a)</sup>	740 <sup>a)</sup>	740 <sup>a)</sup>	740	464	293	464	293	183	182	103	65	103	65	39	39		
				II.				740 <sup>a)</sup>	740 <sup>a)</sup>	740 <sup>a)</sup>	721	437	275	437	275	172	169	96	60	96	60	36	36		
				III.	580	580	580	580	580	580	580	420	264	420	264	165	165	93	58	93	58	35	32		
	22 - 44	I.									596		596	379	377	220	142	220	142	89	89				
		II.									578		578	367	364	212	137	212	137	85	85				
		III.									567		567	360	360	209	135	209	135	84	81				
	25 - 39	I.								740		740													
		II.								740	740		740												
		III.								580		580													
	29 - 58	I.									740		740	518	517	303	197	303	197	124	124				
		II.									740		740	507	504	295	192	295	192	121	121				
		III.									580		580	499	499	293	191	293	191	120	117				

<b>I. Fig. 470: PTFE-V-ring unit</b>	<b>II. Fig. 470: PTFE- / pure graphite-packing</b>	<b>III. Fig. 471: Bellows seal</b>
Air supply pressure max. of pneumatic actuators DP: 87 psi		
Air supply pressure max. limit of control valve: a) 73 psi    b) 65 psi    c) 58 psi    d) 51 psi    e) 44 psi		

<sup>2)</sup> Not for perforated plug (presentation refer to page 13). Please find the Cv-values on page 11.



**max. permissible closing pressures** for parabolic plug on flow-to-open  $P_2 = 0$ 

(Observe pressure-temperature-limits on page 13. Plug design acc. to „Selection of flow restrictors“, refer to page 13.)

Spring closes on air failure																											
Size			1"		1 1/2"		2"		3"		4"		6"		8"												
Standard <sup>2)</sup> Cv-values	Seat- $\varnothing$ (in)				0.98			1.57			1.97			3.15			3.94			5.91			7.87				
	Cv-value				12			29			46			116			185			462			728				
	Travel (in)				0.79			1.18			1.18			1.18			1.18			1.97			2.56				
Reduced Cv-values	Seat- $\varnothing$ (in)		0.71	0.87		0.98	1.26		1.26	1.57		1.97	2.56		2.56	3.15		3.94	4.92		4.92	5.91					
	Cv-value		4.6	7.3		12	18		18	29		46	73		73	116		185	289		289	462					
	Travel (in)		0.79	0.79		0.79	0.79		0.79	1.18		1.18	1.18		1.18	1.18		1.18	1.97		1.97	1.97					
Actuator DP 34	Control signal (psi)	Air supply pressure min. (psi)	3 - 15	17	I.						121 <sup>e)</sup>		121 <sup>e)</sup>	72 <sup>e)</sup>	71	37	21	37	21								
					II.						103 <sup>e)</sup>		103 <sup>e)</sup>	61 <sup>e)</sup>	58	29	16	29	16								
					III.						92 <sup>e)</sup>		92 <sup>e)</sup>	54 <sup>e)</sup>	54 <sup>b)</sup>	27 <sup>b)</sup>	14 <sup>b)</sup>	27 <sup>b)</sup>	14 <sup>b)</sup>								
				6 - 17	20	I.						295 <sup>d)</sup>		295 <sup>d)</sup>	185 <sup>d)</sup>	183	104	66	104	66	39	39	23	14			
						II.						277 <sup>d)</sup>		277 <sup>d)</sup>	173 <sup>d)</sup>	170	96	61	96	61	36	36	21		18		
						III.						266 <sup>d)</sup>		266 <sup>d)</sup>	166 <sup>d)</sup>	166 <sup>b)</sup>	94 <sup>b)</sup>	59 <sup>b)</sup>	94 <sup>b)</sup>	59 <sup>b)</sup>	35 <sup>b)</sup>	32	18		18		
			12 - 35	39	I.						644 <sup>b)</sup>		644 <sup>b)</sup>	409 <sup>b)</sup>	408	238	154	238	154	96	96	60	40				
					II.						626 <sup>b)</sup>		626 <sup>b)</sup>	398 <sup>b)</sup>	395	230	149	230	149	93	93	57	38	55	36		
					III.						580 <sup>b)</sup>		580 <sup>b)</sup>	391 <sup>b)</sup>	391	228	148	228	148	92	89	55	37	55	37		
			15 - 29	39	I.																					26	
					II.																					26	
					III.																						
			22 - 44	48	I.																						
					II.																						
					III.																						
			30 - 44	48	I.						740 <sup>a)</sup>		740 <sup>a)</sup>	740 <sup>a)</sup>	740	740	443	673	443	282	282						
					II.						740 <sup>a)</sup>		740 <sup>a)</sup>	740 <sup>a)</sup>	740	740	438	666	438	279	279						
					III.								580 <sup>a)</sup>	580	580	436	580	436	277	275							
			29 - 58	65	I.																		169	116			
					II.																		167	115	165	113	62
					III.																			165	113	165	113
			35 - 52	58	I.										740	510	740	510	325	325							
					II.										740	505	740	505	321	321							
					III.											503		503	320	318							
<b>I. Fig. 470: PTFE-V-ring unit</b>			<b>II. Fig. 470: PTFE- / pure graphite-packing</b>										<b>III. Fig. 471: Bellows seal</b>														
Air supply pressure max. of pneumatic actuators DP: 87 psi																											
Air supply pressure max. limit of control valve:			a) 73 psi		b) 65 psi		c) 58 psi		d) 51 psi		e) 44 psi																
Higher closing pressures for 6"/8" in connection with DP34T on request.																											

<sup>2)</sup> Not for perforated plug (presentation refer to page 13). Please find the Cv-values on page 11.

**max. permissible closing pressures** for parabolic plug on flow-to-open  $P_2 = 0$

(Observe pressure-temperature-limits on page 13. Plug design acc. to „Selection of flow restrictors“, refer to page 13.)

**Spring opens on air failure**

Size		1"						1 1/2"			2"			3"			4"			6"						
Standard <sup>2)</sup> Cv-values	Seat-Ø (in)						0.98			1.57			1.97			3.15			3.94			5.91				
	Cv-value						12			29			46			116			185			462				
	Travel (in)						0.79			1.18			1.18			1.18			1.18			1.97				
Reduced Cv-values	Seat-Ø (in)	0.12	0.2	0.47	0.71	0.87		0.98	1.26		1.26	1.57		1.97	2.56		2.56	3.15		3.94	4.92					
	Cv-value	0.29 0.18 0.12	0.73 0.46	2.9 1.8 1.2	4.6	7.3		12	18		18	29		46	73		73	116		185	289					
	Travel (in)	0.79	0.79	0.79	0.79	0.79		0.79	0.79		0.79	1.18		1.18	1.18		1.18	1.18		1.18	1.97					
Actuator DP 32	Air supply pressure (psi)	20	I.	740	740	740	374	243	183	172	97	55	97	55	30	29										
			II.	740	740	724	311	200	150	128	69	38	69	38	19	16										
			III.	141	137	122	109	101	95	95	52	27	52	27												
		29	I.				740	740	591	580	349	219	349	219	135	134	75	46	75	46	27	27				
			II.				740	740	723	557	535	322	201	322	201	124	121	67	41	67	41	23	23			
			III.	527	523	508	496	487	481	481	304	190	304	190	117	117	64	39	64	39	22	20				
		44	I.						740	740	740	490	740	490	311	309	179	115	179	115	71	71				
			II.						740	740	740	740	473	740	473	299	296	171	110	171	110	68	68			
			III.	580	580	580	580	580	580	580	580	462	580	462	292	292	169	109	169	109	67	64				
		58	I.										740		740	486	484	284	185	284	185	116	116			
			II.										740		740	474	472	276	180	276	180	113	113			
			III.										580		580	467	467	273	178	273	178	111	109			
		73	I.													661	660	388	254	388	254	160	160			
			II.													650	647	381	249	381	249	157	157			
			III.													580	580	378	247	378	247	156	153			
		87	I.													740	740	493	323	493	323	205	205			
			II.													740	740	485	318	485	318	202	202			
			III.														482	316	482	316	200	198				
		Actuator DP 33	Air supply pressure (psi)	20	I.	740 <sup>c)</sup>	740 <sup>c)</sup>	740 <sup>c)</sup>	676 <sup>c)</sup>	449 <sup>c)</sup>	344 <sup>c)</sup>	333 <sup>a)</sup>	196 <sup>a)</sup>	120 <sup>a)</sup>	196 <sup>a)</sup>	120 <sup>a)</sup>	72 <sup>a)</sup>	70	37	21	37	21				
					II.	740 <sup>c)</sup>	740 <sup>c)</sup>	740 <sup>c)</sup>	614 <sup>c)</sup>	407 <sup>c)</sup>	311 <sup>c)</sup>	288 <sup>a)</sup>	169 <sup>a)</sup>	102 <sup>a)</sup>	169 <sup>a)</sup>	102 <sup>a)</sup>	60 <sup>a)</sup>	57	29	16	29	16				
					III.	293 <sup>a)</sup>	289 <sup>a)</sup>	274 <sup>a)</sup>	262 <sup>a)</sup>	253 <sup>a)</sup>	247 <sup>a)</sup>	247 <sup>a)</sup>	152 <sup>a)</sup>	91 <sup>a)</sup>	152 <sup>a)</sup>	91 <sup>a)</sup>	53 <sup>a)</sup>	53	26	14	26	14				
				29	I.				740 <sup>c)</sup>	740 <sup>c)</sup>	740 <sup>c)</sup>	740 <sup>a)</sup>	598 <sup>a)</sup>	380 <sup>a)</sup>	598 <sup>a)</sup>	380 <sup>a)</sup>	239 <sup>a)</sup>	238	137	87	137	87	53	53		
					II.				740 <sup>c)</sup>	740 <sup>c)</sup>	740 <sup>c)</sup>	740 <sup>a)</sup>	571 <sup>a)</sup>	362 <sup>a)</sup>	571 <sup>a)</sup>	362 <sup>a)</sup>	228 <sup>a)</sup>	225	129	82	129	82	50	50		
					III.	580 <sup>a)</sup>	580 <sup>a)</sup>	580 <sup>a)</sup>	580 <sup>a)</sup>	580 <sup>a)</sup>	580 <sup>a)</sup>	580 <sup>a)</sup>	553 <sup>a)</sup>	351 <sup>a)</sup>	553 <sup>a)</sup>	351 <sup>a)</sup>	220 <sup>a)</sup>	220	136	80	126	80	49	46		
44	I.											740 <sup>a)</sup>	740 <sup>a)</sup>	740 <sup>a)</sup>	740 <sup>a)</sup>	518 <sup>a)</sup>	517	303	197	303	197	124	124			
	II.											740 <sup>a)</sup>	740 <sup>a)</sup>	740 <sup>a)</sup>	740 <sup>a)</sup>	507 <sup>a)</sup>	504	295	192	295	192	121	121			
	III.											580 <sup>a)</sup>	580 <sup>a)</sup>	580 <sup>a)</sup>	580 <sup>a)</sup>	499 <sup>a)</sup>	499	293	191	293	191	120	117			
58	I.															740 <sup>a)</sup>	740	469	308	469	308	195	195			
	II.															740 <sup>a)</sup>	740	462	303	462	303	192	192			
	III.															580 <sup>a)</sup>	580	459	301	459	301	190	188			
73	I.																	636	418	636	418	266	266			
	II.																	628	413	628	413	262	262			
	III.																	580	411	580	411	261	259			
87	I.																	740	528	740	528	337	337			
	II.																	740	523	740	523	333	333			
	III.																	522		522	332	330				

<b>I. Fig. 470: PTFE-V-ring unit</b>	<b>II. Fig. 470: PTFE- / pure graphite-packing</b>	<b>III. Fig. 471: Bellows seal</b>
Air supply pressure max. of pneumatic actuators DP: 87 psi		
Air supply pressure max. limit of control valve: a) 73 psi    b) 65 psi    c) 58 psi    d) 51 psi    e) 44 psi		

<sup>2)</sup> Not for perforated plug (presentation refer to page 13). Please find the Cv-values on page 11.

**max. permissible closing pressures** for parabolic plug on flow-to-open  $P_2 = 0$   
(Observe pressure-temperature-limits on page 13. Plug design acc. to „Selection of flow restrictors“, refer to page 13.)

Spring opens on air failure																										
Size		1"		1 1/2"		2"		3"		4"		6"		8"												
Standard <sup>2)</sup> Cv-values	Seat-∅ (in)			0.98			1.57			1.97			3.15			3.94			5.91			7.87				
	Cv-value			12			29			46			116			185			462			728				
	Travel (in)			0.79			1.18			1.18			1.18			1.18			1.97			2.56				
Reduced Cv-values	Seat-∅ (in)	0.71	0.87		0.98	1.26		1.26	1.57		1.97	2.56		2.56	3.15		3.94	4.92		4.92	5.91					
	Cv-value	4.6	7.3		12	18		18	29		46	73		73	116		185	289		289	462					
	Travel (in)	0.79	0.79		0.79	0.79		0.79	1.18		1.18	1.18		1.18	1.18		1.18	1.97		1.97	1.97					
Actuator DP 34	Air supply pressure (psi)	20	I.							295 <sup>e)</sup>	295 <sup>e)</sup>	185 <sup>e)</sup>	183	104	66	104	66	39	39	23	14					
			II.							277 <sup>e)</sup>	277 <sup>e)</sup>	173 <sup>e)</sup>	170	96	61	96	61	36	36	21		18				
			III.							266 <sup>e)</sup>	266 <sup>e)</sup>	166 <sup>e)</sup>	166 <sup>b)</sup>	94 <sup>b)</sup>	59 <sup>b)</sup>	94 <sup>b)</sup>	59 <sup>b)</sup>	35 <sup>b)</sup>	32	18		18				
			I.							740 <sup>e)</sup>	740 <sup>e)</sup>	522 <sup>e)</sup>	520	305	199	305	199	125	125	78	53					
			II.							740 <sup>e)</sup>	740 <sup>e)</sup>	510 <sup>e)</sup>	507	297	194	297	194	122	122	76	51	73	49	26		
			III.							580 <sup>e)</sup>	580 <sup>e)</sup>	503 <sup>e)</sup>	503 <sup>b)</sup>	295 <sup>b)</sup>	192 <sup>b)</sup>	295 <sup>b)</sup>	192 <sup>b)</sup>	121 <sup>b)</sup>	118	73	49	73	49	26		
		44	I.								740 <sup>e)</sup>	740	640	421	640	421	268	268	169	116						
			II.								740 <sup>e)</sup>	740	632	416	632	416	264	264	167	115	165	113	62			
			III.								580 <sup>e)</sup>	580 <sup>b)</sup>	580 <sup>b)</sup>	414 <sup>b)</sup>	580 <sup>b)</sup>	414 <sup>b)</sup>	263 <sup>b)</sup>	260	165	113	165	113	62			
		58	I.										740	643	740	643	410	410	261	180						
			II.										740	638	740	638	407	407	259	179	256	177	98			
			III.											580 <sup>b)</sup>		580 <sup>b)</sup>	406 <sup>b)</sup>	403	256	177	256	177	98			
		73	I.											740		740	553	553	353	244						
			II.	Higher closing pressures for 6"/8" with DP34T on request.										740		740	550	550	351	242	348	240	134			
			III.																546	348	241	348	241	134		
		87	I.	2) Not for perforated plug (presentation refer to page 13). Please find the Cv-values on page 11.														696	696	444	308					
			II.															692	692	442	306	439	304	170		
			III.															580	440	304	440	304	170			

I. Fig. 470: PTFE-V-ring unit;      II. Fig. 470: PTFE- / pure graphite-packing      III. Fig. 471: Bellows seal  
Air supply pressure max. of pneumatic actuators DP: 87 psi  
Air supply pressure max. limit of control valve: a) 73 psi      b) 65 psi      c) 58 psi      d) 51 psi      e) 44 psi

**Cv-value chart**

Size	1"	1 1/2"	2"	3"	4"	6"	8"	Travel (in)	
	Seat- ∅ (in)								
with parabolic plug	0.46	0.2						0.79	
	0.73	0.2							
	1.2	0.47							
	1.8	0.47							
	2.9	0.47							
	4.6	0.71							
	7.3	0.87							
	12	0.98	0.98					1.18	
	18		1.26	1.26					
	29		1.57	1.57					
	46			1.97	1.97				
	73				2.56	2.56			
	116				3.15	3.15			
	185					3.94	3.94	1.97	
	289						4.92		4.92
	462						5.91		5.91
	728								7.87

Size	1"	1 1/2"	2"	3"	4"	6"	8"	Travel (in)	
	Seat- ∅ (in)								
with v-port plug	73			2.56	2.56			1.18	
	116			3.15	3.15				
	185				3.94	3.94			
	289					4.92	4.92	1.97	
	462					5.91	5.91		
	728						7.87		
with perforated plug	2.9	0.71						0.79	
	4.6	0.87							
	7.3	0.98	0.98						
	12		1.26	1.26					
	18		1.57	1.57					
	29			1.97	1.97				
	1.18	46			2.56	2.56			
		73			3.15	3.15			
		116				3.94	3.94		
		1.97	185				4.92	4.92	
			289				5.91	5.91	
			462					7.87	2.56

Figure		ANSI 300 - 35.470....90 / 35.471....90	
Pos.	Description	Material codes	
1	Body	SA216 WCB	
2	Seat ring *	AISI 420	
3	Plug *	AISI 420	
4	Straight pin *	AISI 302	
5	Stem *	AISI 420	
6	Mounting bonnet	1" - 2": SA 105	3" - 8": SA 216 WCB
7	Guide bushing	AISI 420	
8	Gasket *	CrNi laminated both sides with pure graphite	
9	Studs	SA 193 B7	
10	Hexagon nuts	SA 194 2H	
11	V-ring unit *	PTFE	
13	Washer *	SA 240 Gr. 304	
14	Spring *	AISI 302	
15	Guide band *	PTFE 25% C	
17	Scraper*	PTFE	
18	Stem guide *	AISI 303	
19	Packing box flange	SA 105	
20	Studs	SA 193 B8 Cl.2	
21	Hexagon nuts	SA 194 8/8A	
22.1	Bellows housing	SA 216 WCB	
22.2	Mounting bonnet	SA 216 WCB	
22.3	Stem- / Bellows unit*	AISI 321	
22.4	Guide bushing	AISI 420	
22.5	Guide bushing	AISI 420	
22.6	Gasket *	CrNi laminated both sides with pure graphite	
22.7	Studs	SA 193 B7	
22.8	Hexagon nuts	SA 194 2H	
22.10	Packing ring *	Pure graphite	
22.12	Washer *	SA 240 Gr. 304	
22.17	Screw joint *	AISI 303	
25	Packing spacer *	AISI 420	
26	Packing ring *	PTFE or pure graphite	
* Spare parts			

**Please indicate when ordering:**

1. Figure-No.
2. Size
3. Nominal pressure (PN)
4. Body material
5. Plug design
6. Cv-value
7. Stem sealing
8. Actuator
9. Special execution / accessories

**Example:**  
Figure 35.470; size 4";  
nominal press. ANSI 300;  
body material cast steel;  
parabolic plug; Cv 185;  
stem sealing PTFE-V-ring unit;  
ARI-PREMIO 1124 lbf.

Dimensions in inch (in)  
1 in  $\hat{=}$  25.4 mm

Weights in pound (lb)  
1 lb  $\hat{=}$  0.45 kg

Pressures in psig (gauge)  
1 psi  $\hat{=}$  0.07 bar / 1 bar  $\hat{=}$  14.5 psi

Cv in US gal/min  
Cv 1  $\hat{=}$  Kvs 0.86

1 lbf  $\hat{=}$  4.45 N  
1 ft lbf  $\hat{=}$  1.36 Nm

**Valve dimensions**

Face to face length Form RF acc. to ANSI / ISA - S75.03-1992 (Face to face lengths for flanges Form RTJ on request.)

Size		1"	1 1/2"	2"	3"	4"	6"	8"
L (Fig. 470/471-ANSI)	(in)	7.75	9.25	10.5	12.5	14.5	18.62	22.38

**Flange dimensions**

Flanges acc. to ANSI B16.5

Size		1"	1 1/2"	2"	3"	4"	6"	8"
ANSI 300 (Fig. 470/471 - ANSI)	$\varnothing$ D (in)	4.88	6.12	6.5	8.25	10	12.5	15.0
	$\varnothing$ K (in)	3.5	4.5	5.0	6.62	7.88	10.62	13.0
	n x $\varnothing$ d1 (in)	4 x 0.75	4 x 0.88	8 x 0.75	8 x 0.88	8 x 0.88	12 x 0.88	12 x 1.0

**Technical data of the valve**

<b>Type:</b>	Control valve Fig. 470/471 - ANSI			<b>Guiding:</b>	<ul style="list-style-type: none"> <li>Parabolic plug: post guiding</li> <li>Perforated / V-port plug: post and port guiding</li> </ul>
<b>Size</b>	inch 1"; 1 1/2"; 2"; 3"; 4"; 6"; 8"			<b>Flow characteristic:</b>	Linear or equal percentage (from Cv 116 modified equal percentage)
<b>Nominal pressure:</b>	ANSI 300			<b>Rangeability:</b>	<ul style="list-style-type: none"> <li>50 : 1 on parabolic plug (1"-6")</li> <li>30 : 1 on parabolic plug / perforated plug / V-port plug (8")</li> </ul>
<b>Connections:</b>	Flanges acc.to ANSI B16.5 Standard: Form RF Option: Form RTJ			<b>Shut off class:</b>	<ul style="list-style-type: none"> <li>Metal seat - Leakage class IV acc. to ANSI / FCI 70-2</li> <li>Soft seat - Leakage class VI acc. to ANSI / FCI 70-2 (from Cv 1.2)</li> </ul>
<b>Stem sealing:</b>	Fig. 470 - ANSI <ul style="list-style-type: none"> <li>PTFE-V-ring unit +14°F up to +428°F</li> <li>PTFE-packing +14°F up to +482°F</li> <li>Pure graphite-packing +14°F up to +842°F</li> </ul>			<b>Selection of possible applications:</b>	<b>Fig. 470 - ANSI</b> <ul style="list-style-type: none"> <li>Cooling water</li> <li>Cooling brine</li> <li>Warm water</li> <li>Hot water</li> <li>Steam</li> <li>Gas</li> </ul>
	Fig. 471 - ANSI <ul style="list-style-type: none"> <li>Stainless steel bellows seal (for restricted pressure range) -76°F up to +842°F</li> </ul>				
<b>Body material:</b>	SA 216 WCB	ANSI 300	Fig. 35.470.....90 Fig. 35.471.....90	- other applications on request -	
<b>Plug design:</b>	Standard: <ul style="list-style-type: none"> <li>Parabolic plug (1"-6"), metal seat</li> <li>V-port plug (8"), metal seat</li> </ul> Special designs: <ul style="list-style-type: none"> <li>Parabolic plug with PTFE soft seat (max. 392°F)</li> <li>Perforated plug, metal seat</li> <li>Parabolic pressure balanced plug (or perforated plug), metal seat; Material of piston seal: PTFE with stainless steel spring (max. 392°F)</li> </ul>				

Technical data for actuator refer to corresponding actuator data sheets.

**Selection of flow restrictors**

Parabolic plug with post guiding (Standard on 1"-6")		V-port plug with post and port guiding (Standard on 8")		Perforated plug with post and port guiding	
Seat-Ø in	Δ Ps psi	Seat-Ø in	Δ Ps psi	Seat-Ø in	Δ Ps psi
≤ 1.26	580			0.71-5.91	740
1.57-1.97	435				
2.56	217	2.56-3.15	435		
3.15	116				
3.94	58	3.94	362		
4.92-5.91	29	4.92-5.91	217		
		7.87	174	7.87	435

Δ Ps = max. differential pressure drop

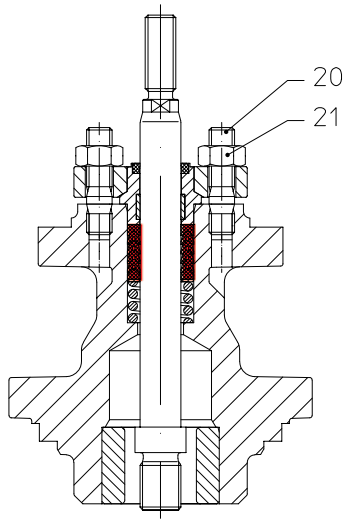
**Pressure-temperature-ratings**

Observe regulations

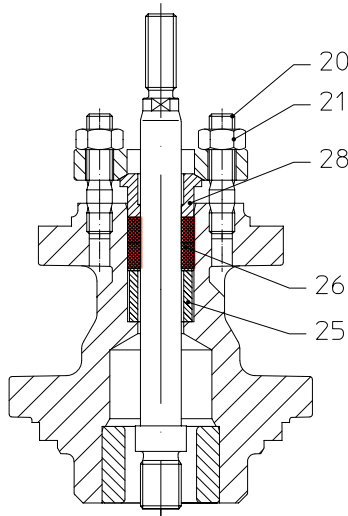
acc. to ASME B16.34		Temperature									
Material	Class	-20°F up to 100°F	200°F	300°F	400°F	500°F	600°F	650°F	700°F	750°F	800°F
470-ANSI	ANSI 300	740 psi	675 psi	655 psi	635 psi	600 psi	550 psi	535 psi	535 psi	505 psi	410 psi
471-ANSI	ANSI 300 restricted	580 psi	544 psi	504 psi	436 psi	404 psi	366 psi	352 psi	343 psi	335 psi	328 psi

Intermediate values for max. permissible operational pressures can be determined by linear interpolation of the given temperature / pressure chart.

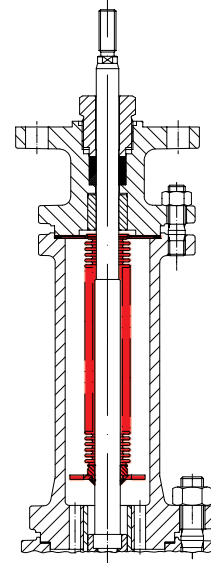
**Stem sealings**



Spring loaded PTFE-V-ring unit

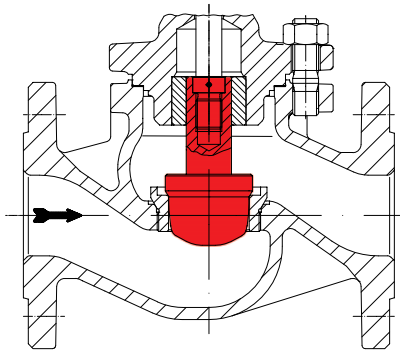


PTFE- / pure graphite-packing

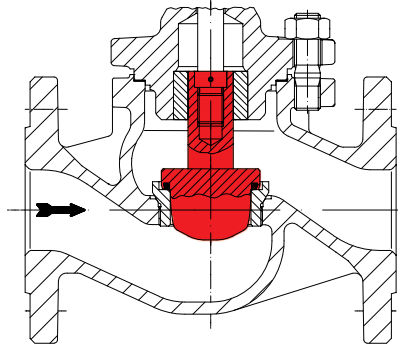


Bellows seal with safety stuffing box

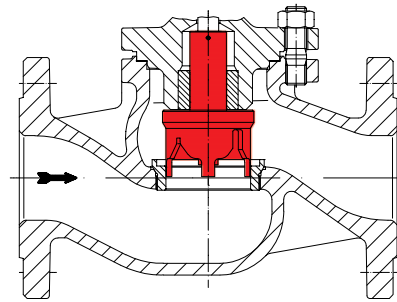
**Plug designs**



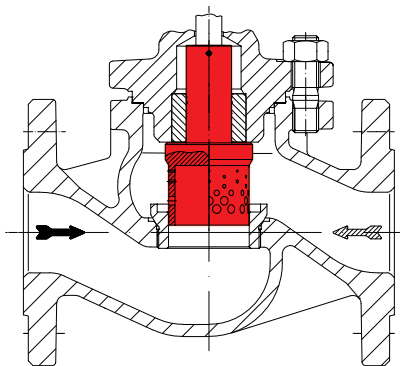
Parabolic plug with post guiding  
 (Standard on 1"-6")



Parabolic plug with PTFE soft seat and  
 post guiding

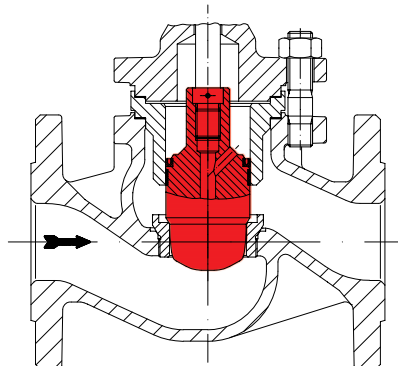


V-port plug with post and port guiding  
 (Standard on 8")

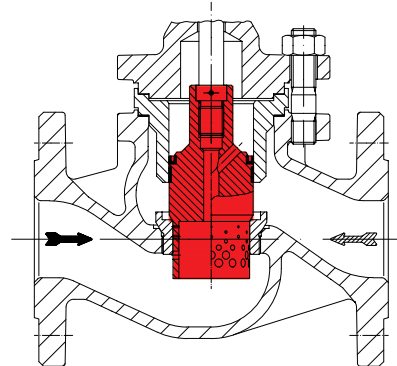


Perforated plug with post and port guiding

Flow direction for gas and steam to reduce  
 the sound level  
 Flow direction for liquids to reduce the  
 cavitation



Parabolic pressure balanced plug



Perforated pressure balanced plug

Flow direction for gas and steam to reduce  
 the sound level  
 Flow direction for liquids to reduce the  
 cavitation



**Technology for the Future.**  
 GERMAN QUALITY VALVES