



TECHNICAL BULLETIN

Kammer TotalFlow – 335000

High Pressure Control Valves

FCD KMENTB3530-01 09/17



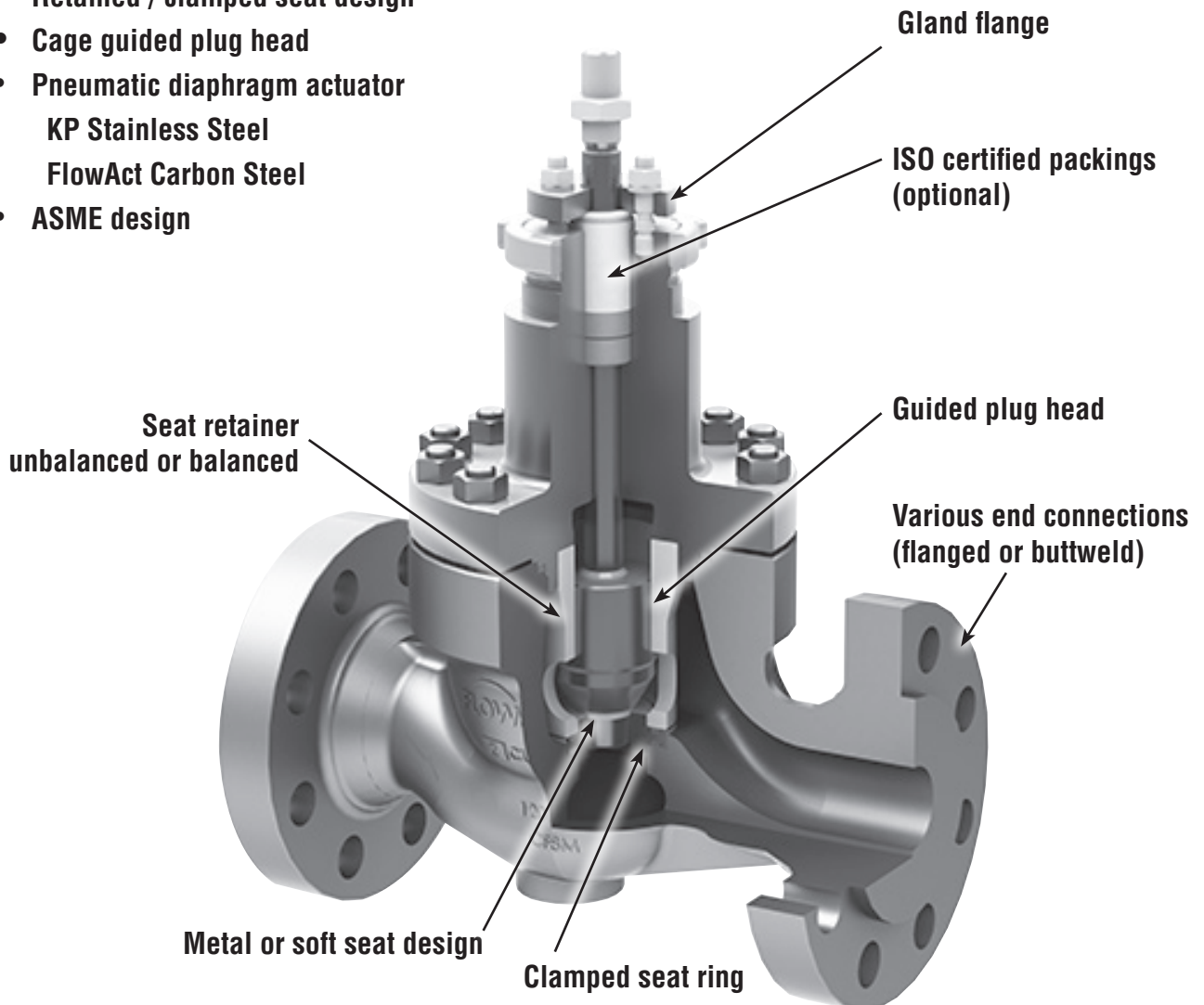
Experience In Motion

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Features

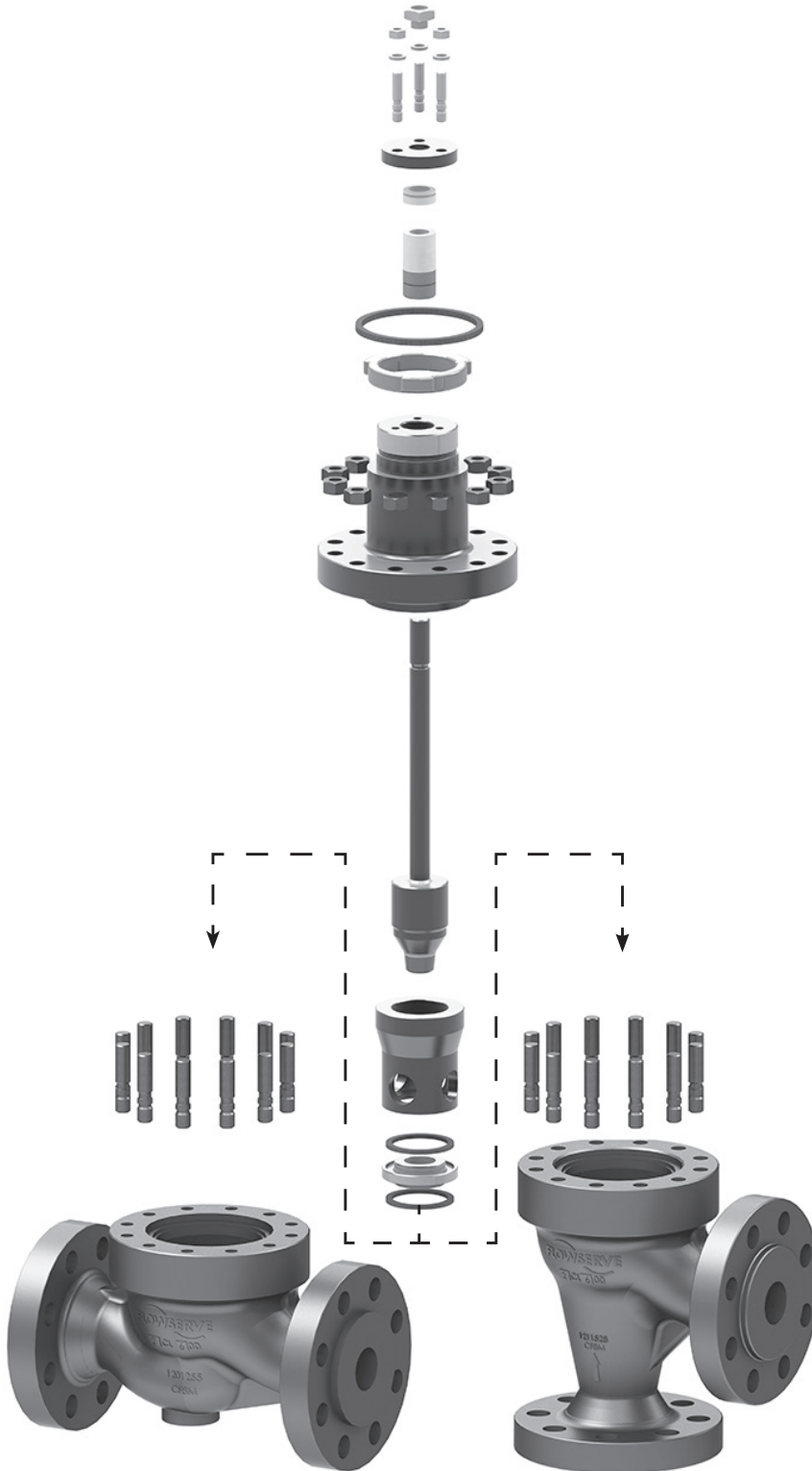
- **Cast design 1" - 4", DIN DN 25-100**
- **Pressure rating CL600-1500, PN 63-250**
- **Retained / clamped seat design**
- **Cage guided plug head**
- **Pneumatic diaphragm actuator**
 - KP Stainless Steel**
 - FlowAct Carbon Steel**
- **ASME design**



Specifications

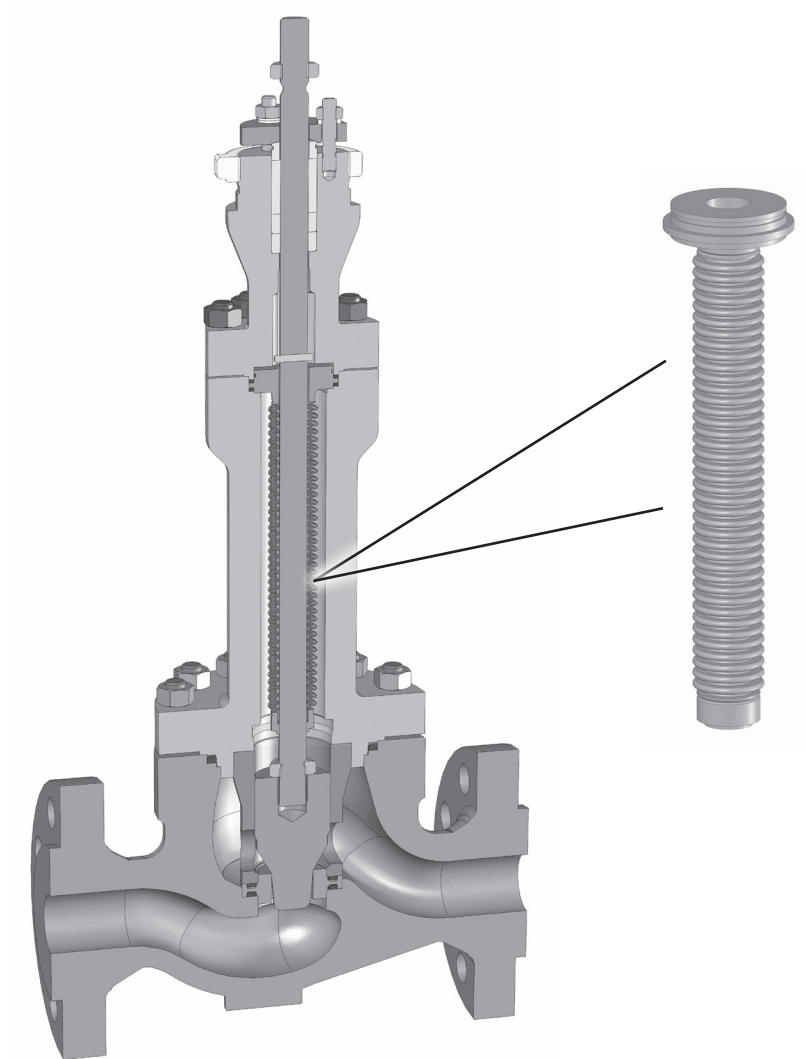
Size	ANSI 1 - 4 inch DIN DN 25-100 Other sizes upon request
Pressure class	Class 600 - 1500 PN 63-250 Other pressure classes upon request
Body materials	Carbon Steel (WCC, 1.0619) Stainless Steel (CF8M, 1.4408) Chrome Moly (WC9)
Body type	Angle and globe
End connections	Flanges acc. to ANSI B16.5 Flanges acc. to EN 1092-1 Weld ends Other end connections upon request
Face to face	ANSI/ISA 75.08 DIN EN 558 Other face-to-face dimensions upon request
Trim type	Balanced Unbalanced
Trim designs	Standard trim Multihole trim
Trim materials	See separate table
Shutoff	ANSI Class IV, V optional ANSI Class VI (Soft seat)
Flow characteristic	Modified equal percentage Modified linear Quick open
Stem sealing	Standard PTFE, Graphite Fugitive emissions packing acc. to ISO 15848-1 and TA-Luft
Flow capacity	See separate table
Actuator	Spring diaphragm actuator type KP (stainless steel) Spring diaphragm actuator type FlowAct (carbon steel) Electric actuator

Principle of Design



The internal parts and the bonnet are identical for both angle and globe valve designs for any given valve size.

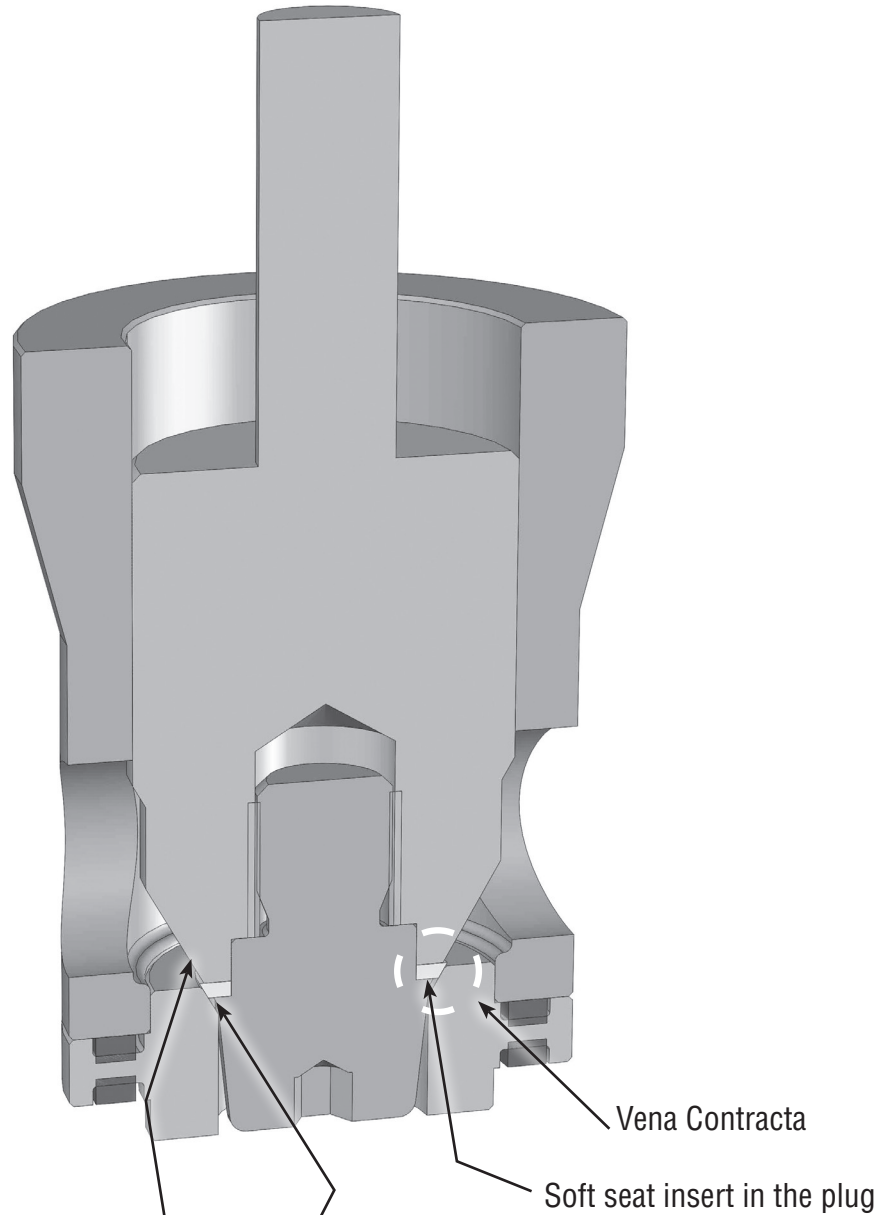
Metal Bellows Seal



To protect personnel and the environment from toxic or aggressive media, these must be processed in a closed system. Kämmer metal bellows seals fulfill the requirements of the German regulation “TA-Luft”. Kämmer’s design includes a rugged hydroformed bellows seal with the backup packing seal located well above the bellows. For maximum protection, bellows are provided with up to five walls having wall thickness from 0.1 to 0.15 mm (for greater wall flexibility). A leak detection port is standard. Kämmer offers a variety of bellows seals, providing the best cycle life in the business. Depending on the pressure and temperature, bellows seal designs can exceed 1 million cycles. To ensure the integrity of the bellows seal, each new valve or bellows seal spare part is tested using a stringent helium leak test. Instead of a welded bellows design, only hydroformed bellows seals are used because of their strength and ability to withstand pressure, especially in high pressure applications. Because minimal welding is required for hydroformed bellows, they are available in a wide variety of materials, such as 300 series stainless steels, Hastelloy® C 276, Nickel, Monel®, Titanium, Inconel® and PTFE.

Soft Seat

The soft seat parts move away from the Vena Contracta before flow commences to reduce erosion. In the shutoff position there is double contact from soft seat (primary) and metal to metal (secondary).



Double contact in shut-off position:
 Metal to metal backseat - secondary
 Soft seat contact - primary

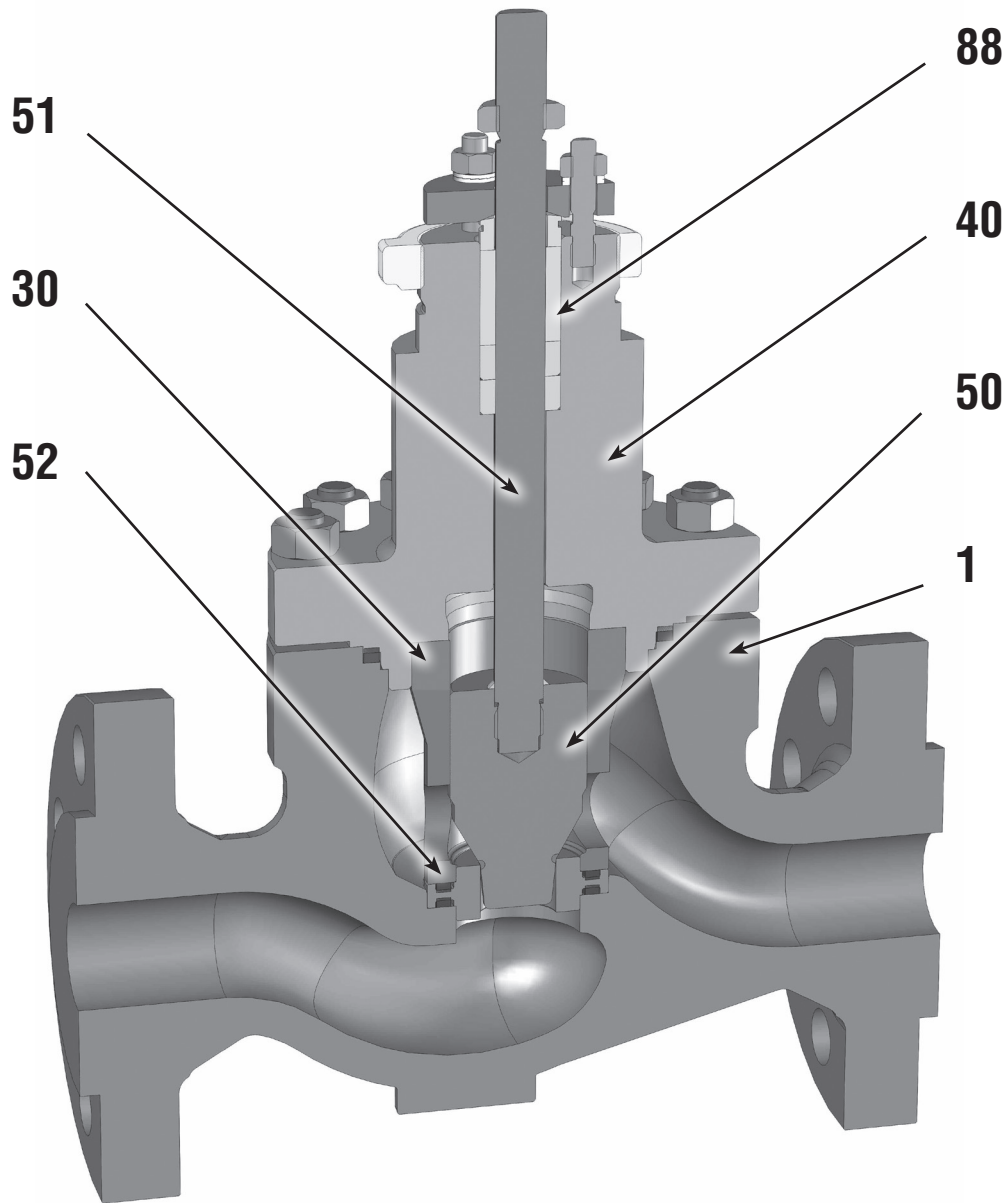
Flow Capacity

Kvs	Cv	Seat	Trim#		1"	1.5"	2"	3"	4"
		mm	in	mm	Stroke 20 mm			Stroke 40 mm	
0.1	0.12	4.5	.18E	4.5E	X				
0.16	0.19		.18D	4.5D	X				
0.25	0.29		.18C	4.5C	X				
0.4	0.47		.18B	4.5B	X				
0.63	0.74		.18A	4.5A	X				
1	1.2	7	.28B	7B	X				
1.6	1.9		.28A	7A	X				
2.5	2.9	10	.40	10	X				
4	4.7	12	.48	12	X	X	X		
6.3	7.4	16	.63	16		X	X		
8.1	9.4	18	.70	18	X				
10	12	20	.80	20		X	X	X	X
16	19	25	1.00	25		X	X	X	X
25	29	32	1.25	32				X	X
31	36	35	1.38	35		X	X		
40	47	40	1.60	40				X	X
63	74	50	2.00	50					X
81	94	57	2.16	55				X	
100	120	63	2.50	63					
123	146	70	2.75	70					X
160	190	80	3.20	80					
250	290	100	3.90	100					
400	470	125	4.90	125					

Stem size and material

Size		Pressure Class		Single Acting Actuator					
				non Pressure Balanced			Pressure Balanced		
				Diameter [mm]	Diameter [in]	Material	Diameter [mm]	Diameter [in]	Material
1"	DN25	CL 600	PN 100	10	0,394	1.4571			
		CL 900	PN 160	10	0,394	1.4548.4			
		CL 1500	PN 250	10	0,394	1.4548.4			
1,5"/2"	DN40 DN50	CL 600	PN 100	16	0,630	1.4571	16	0,630	1.4571
		CL 900	PN 160	16	0,630	1.4548.4	16	0,630	1.4571
		CL 1500	PN 250	16	0,630	1.4548.4	16	0,630	1.4571
3"	DN80	CL 600	PN 100	16	0,630	1.4548.4	16	0,630	1.4571
		CL 900	PN 160	16	0,630	1.4548.4	16	0,630	1.4571
		CL 1500	PN 250	16	0,630	1.4548.4	16	0,630	1.4548.4
4"	DN100	CL 600	PN 100	24	0,945	1.4548.4	24	0,945	1.4571
		CL 900	PN 160	24	0,945	1.4548.4	24	0,945	1.4571
		CL 1500	PN 250	24	0,945	1.4548.4	24	0,945	1.4571

Construction



Item	Description
1	Body
30	Retainer
40	Bonnet
50	Plug
51	Stem
52	Seat Ring
88	Packing Kit

Materials of Construction

Body (1)

	ANSI		
Materials	Stainless Steel	Carbon Steel	Other
Cast (ANSI)	J82900/CF8M	J03003/WCC	J42049/WC9
Cast (DIN)	J82900/1.4408	J03003/1.0619	

Bonnet (40)

	ANSI		
Materials	Stainless Steel	Carbon Steel	Other
Cast	J82900/CF8M/1.4408	J03003/WCC/1.0619	J42049/WC9
Forging	S31603/316L/1.4404	K03502/A105/1.0460	Special Alloys

Trim Parts

Materials	Plug (50)	Seat (52)	Stem (51)	Soft Seat
Standard	S31635/316Ti/1.4571	S31635/316Ti/1.4571	S31635/316Ti/1.4571	PTFE PCTFE
	S44003/440B/1.4112	S44003/440B/1.4112		
	S31635/316Ti/1.4571 with Alloy 6	S31635/316Ti/1.4571 with Alloy 6	S17400/17-4PH/ 1.4548.4	
NACE*	S17400/17-4PH/1.4548.4	S31635/316Ti/1.4571	S17400/17-4PH/ 1.4548.4	
	S31635/316Ti/1.4571			
	S31635/316Ti/1.4571 with Alloy 6	S31635/316Ti/1.4571 with Alloy 6	S20910/Nitronic 50/ 1.4565	

* In accordance with MR 0103 and ISO 15156 (MR 0175)

Packing (88)

	Material	Max. Pressure	Max. Temp	Certificate
Standard	PTFE	250 bar (3626 psi)	250°C (480°F)	None
	Graphite	250 bar (3626 psi)	500°C (930°F)	
Life loaded	Sureguard HP LL	160 bar (2320 psi)	280°C (536°F)	ISO 15848-1 Class B
	Sureguard HP 325	325 bar (4713 psi)	250°C (480°F)	TA-Luft (max. 80°C)
	ISO C V-Ring	100 bar (1450 psi)	170°C (338°F)	ISO 15848-1 Class C

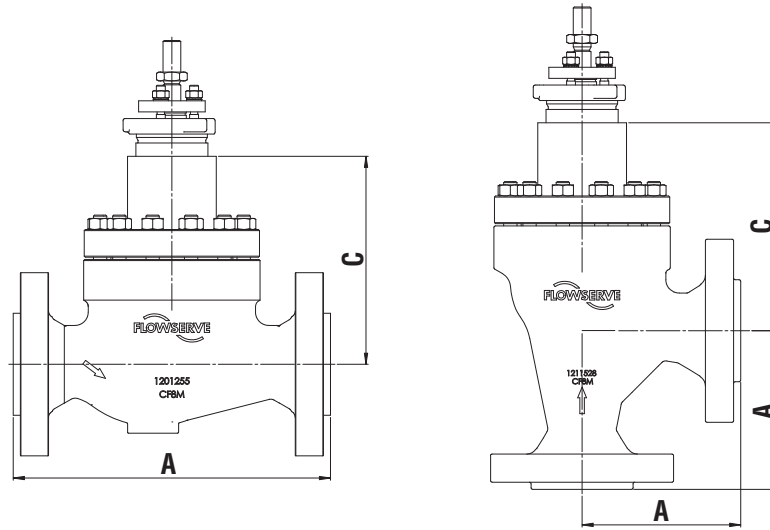
Body temperature limitations

Materials	Material group	min. Temperature	max. Temperature
J82900/CF8M	2.2	-29°C (-20°F)	400°C (750°F)
J03003/WCC	1.2	-29°C (-20°F)	400°C (750°F)

Pressure balanced gasket temperature limitations

	Material	max. Temperature
Standard	V-Ring uni-direction	250°C (480°F)
	Turcon O-Ring supported (optional)	400°C (750°F)
	Metalic piston rings (optional)	250°C (480°F)

Dimensions



Globe Valves ANSI/ISA S75.08.01 (Class 600) / ANSI/ISA S75.08.06 (Class 900 - 1500) End connections flanged

Valve Size	600 #			900 #			1500 #		
(mm)	A (RF)	A (RTJ)	C (Standard)	A (RF)	A (RTJ)	C (Standard)	A (RF)	A (RTJ)	C (Standard)
DN 25	210	210	142	292	292	142	292	292	142
DN 40	251	251	188	333	333	188	333	333	188
DN 50	286	289	188	375	378	188	375	378	188
DN 80	337	340	228	441	441	228	460	463	228
DN 100	394	397	274	511	514	274	530	533	334
(inch)	A (RF)	A (RTJ)	C (Standard)	A (RF)	A (RTJ)	C (Standard)	A (RF)	A (RTJ)	C (Standard)
1	8.27	8.27	5,59	11.50	11.50	5,59	11.50	11.50	5,59
1.5	9.88	9.88	7,38	13.11	13.11	7,38	13.11	13.11	7,38
2	11.26	11.38	7,38	14.76	14.88	7,38	14.76	14.88	7,38
3	13.27	13.39	8,96	17.36	17.36	8,96	18.11	18.23	8,96
4	15.51	15.63	10,79	20.12	20.24	10,79	20.87	20.98	15,51

Angle Valves ANSI/ISA S75.08.01 (Class 600) / ANSI/ISA S75.08.06 (Class 900 - 1500) End connections flanged

Valve Size	600 #			900 #			1500 #		
(mm)	A (RF)	A (RTJ)	C (Standard)	A (RF)	A (RTJ)	C (Standard)	A (RF)	A (RTJ)	C (Standard)
DN 25	105	105	142	146	146	142	146	146	142
DN 40	126	126	188	167	167	188	167	167	188
DN 50	143	145	188	188	189	188	188	189	188
DN 80	169	170	228	221	221	228	230	232	228
DN 100	197	199	274	256	257	274	265	267	334
(inch)	A (RF)	A (RTJ)	C (Standard)	A (RF)	A (RTJ)	C (Standard)	A (RF)	A (RTJ)	C (Standard)
1	4.13	4.13	5,59	5.75	5.75	5,59	5.75	5.75	5,59
1.5	4.94	4.94	7,38	6.56	6.56	7,38	6.56	6.56	7,38
2	5.63	5.69	7,38	7.38	7.44	7,38	7.38	7.44	7,38
3	6.63	6.69	8,96	8.68	8.68	8,96	9.06	9.11	8,96
4	7.76	7.81	10,79	10.06	10.12	10,79	10.43	10.49	15,51

Model Code

Globe Valves DIN EN 558-2 Series 2 (PN 63 - 160)

Globe Valves DIN EN 558-1 Series 92 (PN 250)

End connections flanged

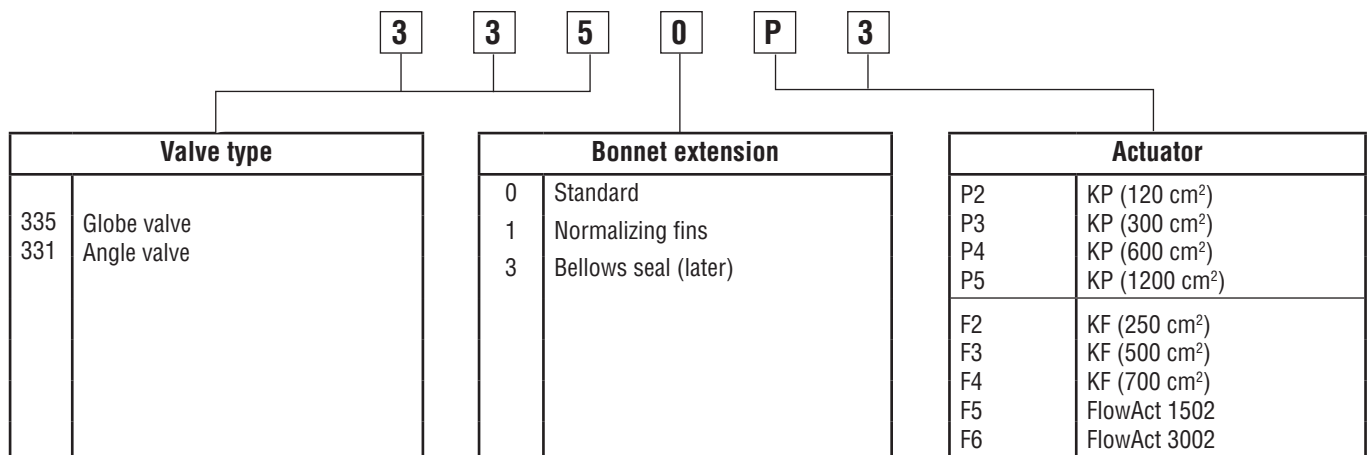
Valve Size (mm)	PN 63 - 160		PN 250	
	A	C (Standard)	A	C (Standard)
DN 25	230	142	260	142
DN 40	260	188	300	188
DN 50	300	188	350	188
DN 80	380	228	450	228
DN 100	430	274	520	
(inch)	A	C (Standard)	A	C (Standard)
1	9,06	5,59	10,24	5,59
1.5	10,24	7,38	11,81	7,38
2	11,81	7,38	13,78	7,38
3	14,96	8,96	17,72	8,96
4	16,93	10,79	20,47	0,00

Angle Valves DIN EN 558-1 Series 9 (PN 63 - 160)

Angle Valves DIN EN 558-93 (PN 250)

End connections flanged

Valve Size (mm)	PN 63 - 160		PN 250	
	A	C (Standard)	A	C (Standard)
DN 25	115	142	130	142
DN 40	130	188	150	188
DN 50	150	188	175	188
DN 80	190	228	225	228
DN 100	215	274	260	
(inch)	A	C (Standard)	A	C (Standard)
1	4,53	5,59	5,12	5,59
1.5	5,12	7,38	5,91	7,38
2	5,91	7,38	6,89	7,38
3	7,48	8,96	8,86	8,96
4	8,46	10,79	10,24	





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