

## K400 SERIES



### Pneumatic (Electric) Ball Valve



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**Valsev**  
Control valve

## Introduction

The closure member of pneumatic globe valve is the ball which spins on the centre line of the body to open and close. Pneumatic globe valve consists of body, bonnet, seat, ball, stem as well as horizontal cylinder actuator, featuring small flow resistance force, good sealing, long service life, high reliability, smooth passway in the body and so on, and is suitable for transporting viscous fluid, seriflux and solid particle and widely used in spaceflight, petrochemical, long-distance pipeline, light and food, metallurgic industries and so on. In recent years science and technology develops rapidly, and due to superior performance and processing technic of globe valves, they gradually develop towards high-pressure, high-temperature, large size as well as high parameter.

Our company has been manufacturing control valves for years, based on which we absorb advanced foreign knowhow, and make improvements in globe valve's structure design, manufacturing technic and etc. to make the valves perform better, suitable for more applications, which have gotten high evaluation from our users.

### Features of Pneumatic Globe Valve Compared with Other Valves:

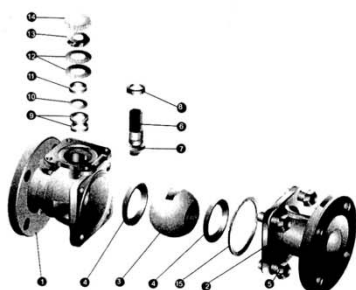
1. Quick open and close, convenient, meet with working conditions demanding quick open and close.
2. Small flow resistance force: no matter full-bore or reduced-opening valves, it's the smallest flow resistance force.
3. Reliable seat seal: material of seal ring is PTFE or other good polymeric material. For demanding higher leakage class, soft sealing is easier for ensuring sealing and meeting with the leakage class required.
4. Reliable stem seal: the stem's reversed sealing can enlarge as medium pressure gets higher, and the stem just rotates when the globe valve opens and closes, gland packing of the stem isn't easy to break, which largely extends service life of the stem sealing.
5. Long service life: as globe valve's sealing parts mostly use PTFE and etc., smallest friction between the body and stem, ensuing service life of the valve.
6. Wide usage: smooth passway in the globe valve, not only can pass conventional mediums or viscous fluid, but also can pass seriflux and dust with fibre.
7. Diversified conventional ways: can be manual, as well as pneumatic, electric, hydraulic, realize long-distance and automatic operation.
8. Easy assembly: globe valve is small in size, light in weight, of compact structure, easy maintenance, transportation as well as storage.



## K410 Soft Seal Float Ball



K410 soft seal float ball valve is specially designed with a double bevel spring seat, effectively reducing friction between the ball and seat as well as operating torque. When medium pressure is low, contact area between the seat and the ball is small, so there comes with relatively large seal pressure, ensuring reliable sealing. When the medium pressure is large, the seat can bear large medium thrust and won't get damaged. Special sealing technique can realize long reliable seal either direction, and bothway bubble-free tight seal is over ANSI Class VI. In operation it can automatically make up for medium pressure and temperature change, to keep the valve always in tight seal, and can automatically let off overstock in the chamber, ensuring reliability and safety.



No.	Part Name	Material
1	Left body	WCB CF8 CF8M
2	Right body	WCB CF8 CF8M
3	Ball	CF8 CF8M
4	Seat	PTFE/reinforced PTFE
5	Connecting bolt	carbon steel stainless steel
6	Stem	304, 316
7	Anti-static device	316
8	Lower packing	PTFE
9	Upper packing	PTFE
10	Stem wear plate	50%SS+50%PTFE
11	Packing bushing	304
12	Disc spring	301
13	Stem bushing nut	stainless steel
14	Locking washer	304
15	Body sealing gasket	PTFE/SUS316

### Main Technical Parameter

Size	mm	15	20	25	32	40	50	65	80	100	125	150	200
	inch	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	4	5	6	8
Rated Cv		25	45	85	125	200	325	450	600	1100	1700	2610	4215
Pressure rating		ANSI CLASS150, 300 or PN16, 25, 40MPa											
Flow characteristic		quick open (on-off type)											
Working temperature		PTFE seat: -20°C-150°C; reinforced PTFE seat: -20°C-250°C											
Leakage		tight shutoff, leak-free											
Body material		WCB, CF8, CF8M, CF3M,											
Ball material		304, 316, 316L											
Seat material		PTFE; reinforced PTFE											

## Soft Seal Float Globe Valve Allowable Pressure Differential

Equipped with VAD type double-acting cylinder actuator (air pressure 0.5MPa) Unit: MPa

Actuator	Output Torque (N.m)	Nominal Diameter mm											
		15	20	25	32	40	50	65	80	100	125	150	200
VAD-60	34.9	4.05	4.05	4.05	4.05	4.05							
VAD-85	75.5						2.96	2.50	1.00				
VAD-105	127.3						4.05	3.20	2.10	1.50			
VAD-125	248							4.05	4.05	2.53	1.40	0.80	
VAD-140	415									4.05	3.05	1.85	
VAD-160	633										3.55	2.25	0.60
VAD-210	1380										4.05	4.05	1.60
VAD-240	1933												3.70
VAD-270	2317												3.80
VAD-300	3177												4.05

Equipped with VAR type single-acting cylinder actuator (air pressure 0.5MPa)Unit: MPa

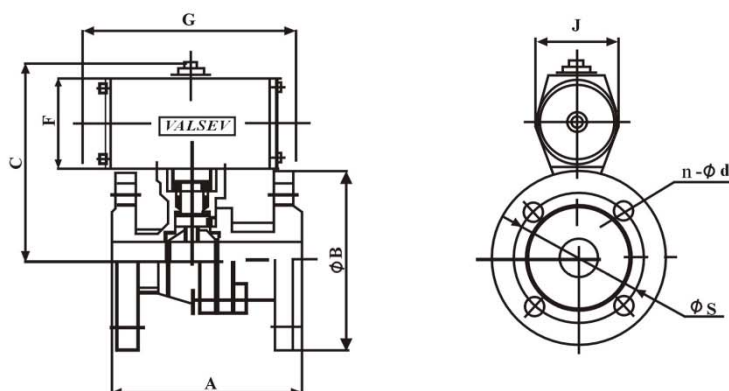
Actuator	Output Torque (N.m)	Nominal Diameter mm											
		15	20	25	32	40	50	65	80	100	125	150	200
VAR-60	14.3	4.05	4.05	4.05	1.10								
VAR-85	34.3				4.05	3.50	1.50						
VAR-105	40.7					4.05	2.00	1.20					
VAR-125	76						2.95	2.50	1.0				
VAR-140	134						4.05	3.80	2.8	1.50	0.35		
VAR-160	166								4.05	2.30	0.50	0.30	
VAR-210	455									4.05	3.15	1.90	
VAR-240	553										3.45	2.0	
VAR-270	586										3.55	2.30	0.35
VAR-300	1025										4.05	4.05	1.00
VAR-350	1492												1.40
VAR-400	2109												2.50

Operation Torque List (Nm) (for reference only)

Nominal Pressure Mpa	Nominal Diameter mm													
	15	20	25	32	40	50	65	80	100	125	150	200	250	300
1.6	8	10	14	20	30	40	60	85	130	190	300	800	1200	1850
2.5、4.0	10	12	18	30	45	55	120	270	330	610	1040	1250	1550	2740
6.4	12	14	20	45	50	90	145	330	380	740	1100	1500	2300	3500

Note: if medium is dry gas, torque add 20%-30%.

# **Dimensions of Soft Seal Float Globe Valve: (equipped with VA type cylinder actuator)**



Unit: mm

Nominal Diameter mm	Actuator	A	φB	C	J	F	G	PN1.6MPa		PN2.5MPa		PN4.0MPa	
		A*	φB					φS	N-φd	φS	N-φd	φS	N-φd
15	VAD-60	130	95	166	70	88	176	65	4-φ14	65	4-φ14	65	4-φ14
	VAR-60						196						
20	VAD-60	130	105	171	70	88	176	75	4-φ14	75	4-φ14	75	4-φ14
	VAR-60	150					196						
25	VAD-60	140	115	182	70	88	176	85	4-φ14	85	4-φ14	85	4-φ14
	VAR-60	160					196						
32	VAD-60	165	140	189	70	88	176	100	4-φ18	100	4-φ18	100	4-φ18
	VAR-85	180		210	90	109	214						
40	VAD-60	165	150	194	70	88	176	110	4-φ18	110	4-φ18	110	4-φ18
	VAR-85	200		215	90	109	214						
50	VAD-85	203	165	224	90	109	186	125	4-φ18	125	4-φ18	125	4-φ18
	VAR-105	230		248	115	133	288						
65	VAD-85	222	185	243	90	109	186	145	4-φ18	145	8-φ18	145	8-φ18
	VAR-105	290		267	115	133	288						
80	VAD-105	241	200	277	115	133	236	160	8-φ18	160	8-φ18	160	8-φ18
	VAR-125	310		299	139	155	334						
100	VAD-125	305	220	325	139	155	278	180	8-φ18	190	8-φ22	190	8-φ22
	VAR-140	350	235	342	149	172	420						
125	VAD-140	356	250	385	149	172	326	210	8-φ18	220	8-φ26	220	8-φ26
	VAR-160	400	270	409	178	196	494						
150	VAD-140	394	285	404	149	172	326	240	8-φ22	250	8-φ26	250	8-φ26
	VAR-160	450	300	428	178	196	494						
200	VAD-210	457	340	541	240	258	472	295	12-φ22	310	12-φ26	320	12-φ30
			360										
	VAR-270	550	375	627	300	344	748						

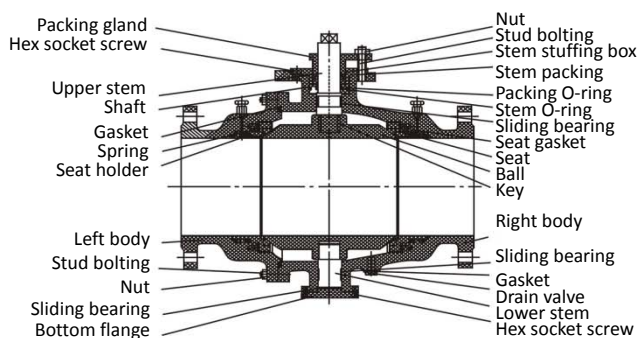
Note: flange connection standard in the table: GB/T9113  
size with asterisk(\*) is PN25/ PN40 MPa

## K420 Soft Seal Fixed Ball Valve



K420 soft seal fixed ball valve is a new generation of high-performance ball valve, which compared with float globe valves uses fixed axis to support, eliminating too large torque caused by large sealing load due to inlet pressure pushing the ball and sealing seat. Ball surface finish reaches a mirror and is lined with self-lubricating PTFE metal bushing, so even under the highest operating pressure reaching the smallest torque is possible. Seat inlaid with polymeric material suitable for different pressure ratings is float, is loaded by spring and always keeps close contact with the ball on off-position. Ball valve design is advanced front-back seal, featuring double-piston effect, and normally is front seal. When front-seal seat breaks and leaks, back-seal seat can still seal, ensuring no leak and bubble-free sealing even under high and low pressure drops.

### Part of Valve Structure Diagram



### Main Technical Parameters

Size	mm	150	200	250	300	350	400
	inch	6	8	10	12	14	16
Rated Cv		2150	3015	5970	9310	14800	20500
Pressure rating	ANSI CLASS150, 300 or PN16, 25, 40MPa						
Flow characteristics	quick open (on-off type)						
Operating temperature	PTFE seat: -20 <sup>0</sup> C~150 <sup>0</sup> C; reinforced PTFE seat:						
Leakage	tight shutoff, no leak						
Body material	WCB、CF8、CF8M、CF3M						
Ball material	304、316、316L						
Seat material	PTFE; reinforced PTFE						

### Soft Seal Fixed Ball Valve Allowable Pressure Differential

Equipped with VAD type double-acting cylinder actuator (air pressure 0.5MPa) Unit: MPa

Actuator	Output Torque (N.m)	Nominal Diameter mm					
		150	200	250	300	350	400
VAD-140	415	1.50	0.35				
VAD-160	633	3.10	1.25	0.25			
VAD-210	1380	4.90	2.50	0.85			
VAD-240	1933		3.94	2.26	1.05		
VAD-270	2317		4.95	3.25	2.65	0.95	
VAD-300	3177			4.65	3.45	2.30	0.85
VAD-350	4756				4.75	3.80	2.05
VAD-400	6781					4.95	4.35

Equipped with VAR type single-acting cylinder actuator (air pressure 0.5MPa) Unit: MPa

Actuator	Output Torque (N.m)	Nominal Diameter mm					
		150	200	250	300	350	400
VAR-210	445	1.55	0.45				
VAR-240	553	1.71	0.71				
VAR-270	586	2.35	0.95	0.40			
VAR-300	1025	3.85	2.05	1.15	0.15		
VAR-350	1492		3.00	2.75	0.90	0.30	
VAR-400	2109			3.45	2.20	0.95	0.35

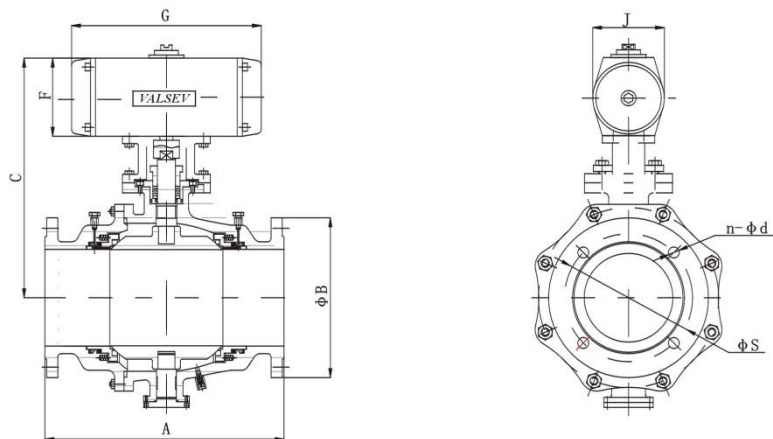
### Operation Torque List (Nm) (for reference only)

Nominal Pressure Mpa	Nominal Diameter mm													
	15	20	25	32	40	50	65	80	100	125	150	200	250	300
1.6	8.8	11	15.4	22	33	44	66	93.5	143	209	330	880	1320	2035
2.5、4.0	11	13.2	19.8	33	49.5	60.5	132	297	363	671	1144	1375	1705	3014
6.4	13.2	15.4	22	49.5	55	99	159.5	363	418	814	1210	1650	2530	3850

Note: if medium is dry gas, torque add 20%-30%.



**Dimensions of Soft Seal Fixed Ball Valve: (equipped with VA type horizontal cylinder actuator)**



Nominal diameter mm	Actuator	A	φ B	C	J	F	G	PN1.6MPa		PN2.5MPa		PN4.0MPa		
		A*	φ B*					φ S	N-φ d	φ S	N-φ d	φ S	N-φ d	
150	VAD·R-210	394	280	794	240	258	472	624	225	8-φ 18	240	8-φ 23	240	8-φ 23
			300											
		403	300											
200	VAD·R-300	457	335	864	240	258	472	624	280	8-φ 18	295	8-φ 23	295	12-φ 23
			360											
		502	375											
250	VAD·R-350	533	405	1054	300	344	540	748	335	12-φ 18	350	12-φ 23	355	12-φ 25
			425											
		568	445											
300	VAD·R-350	610	460	1187	336	360	588	846	395	12-φ 23	400	1-φ 23	410	12-φ 25
			485											
		648	510											
350	VAD·R-400	686	520	1255	390	440	684	932	445	12-φ 23	460	16-φ 23	470	16-φ 25
			550											
		762	570											
400	VAD·R-400	762	580	1521	440	480	748	1066	495	16-φ 23	515	16-φ 25	525	16-φ 30
			610											
		858	655											

Note: flange connection standard in the table: GB/T9113  
size with asterisk(\*) is PN25/ PN40 MPa

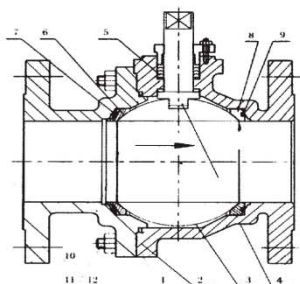


## K430 Hard Seal Float Globe Valve



K430 hard seal float globe valve uses specially-designed spring-load structure, which has good affection of initial pre-tightening, producing more uniform and stable sealing specific pressure and meanwhile it can automatically compensate when temperature or pressure changes, ensuring good sealing under severe working conditions. Ball and seat can be hardened according to nature of the medium, featuring high wear-resistance and corrosion-resistance, and long service life even when the medium contains solid particles. Materials of seals of the body are all high-performance synthetic materials, resistant to high temperature, corrosion and aging, which can make working temperature of the valve reach up to 450°C. The valve can be used for transporting mediums like crude oil, conduction oil, natural gas, steam, solid particles and so on under high temperature or special working conditions.

### Part of Valve Structure Diagram



No.	Part Name	Material	
1	Left Body	WCB	CF8
2	Right Body	WCB	CF8
3	Ball	304 hard chrome plating, 316 overlaying cobalt-base alloy	
4	Stem	304, 316	
5	Packing	PTFE or flexible graphite	
6	Entry Seat	304 overlaying cobalt-base alloy, 316 overlaying cobalt-base	
7	Plate Spring	OCr17Ni4Cu4Nb (17-4PH) H11N	
8	Exit Seat	304 overlaying cobalt-base alloy, 316 overlaying cobalt-base	
9	Seal	fluororubber (<200C) or flexible graphite	
10	Sealing Gasket	reinforced PTFE (<180C) or 316+flexible graphite	
11	Double-screw Bolt	carbon steel	stainless steel
12	Nut	carbon steel	stainless steel

### Main Technical Parameters

Size	mm	15	20	25	32	40	50	65	80	100	125	125	200
	inch	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	4	5	6	8
Rated Cv		25	45	85	125	200	320	450	600	1100	1700	2600	4200
Pressure rating		ANSI150, 300, 600 or PN1.6, 2.5, 4.0, 6.4, 10.0MPa											
Flow characteristics		quick open (on-off type)											
Operating temp.		PTFE packing: -20°C~200°C; flexible graphite packing: 200°C~450°C											
Leakage		ANSI CLASS VI (bubble class)											
Body material		WCB、CF8、CF8M、CF3M											
Ball material		304, 316, 316L nitrogen treatment or overlaying cobalt-base alloy											
Seat material		304, 316, 316L nitrogen treatment or overlaying cobalt-base alloy											

### Metal Hard Seal Float Globe Valve Allowable Pressure Differential

Equipped with VAD type double-acting cylinder actuator (air pressure 0.5MPa) Unit: MPa

Actuator	Output Torque (N.m)	Nominal Diameter mm											
		15	20	25	32	40	50	65	80	100	125	150	200
VAD-60	34.9	4.00	4.00	1.55	1.35								
VAD-85	75.5			4.00	4.00	1.60	0.45						
VAD-105	127.3					4.00	1.45	0.55	0.50				
VAD-125	248						4.00	2.35	2.05	0.30			
VAD-140	415							4.00	4.00	0.50	0.35		
VAD-160	633									1.55	0.45	0.30	
VAD-210	1380									4.00	2.15	2.00	0.20
VAD-240	1933										3.22	2.50	0.40
VAD-270	2317										4.00	4.00	0.65
VAD-300	3177												1.00
VAD-350	4756												2.30
VAD-400	6781												4.00

Equipped with VAR type single-acting cylinder actuator (air pressure 0.5MPa) Unit: MPa

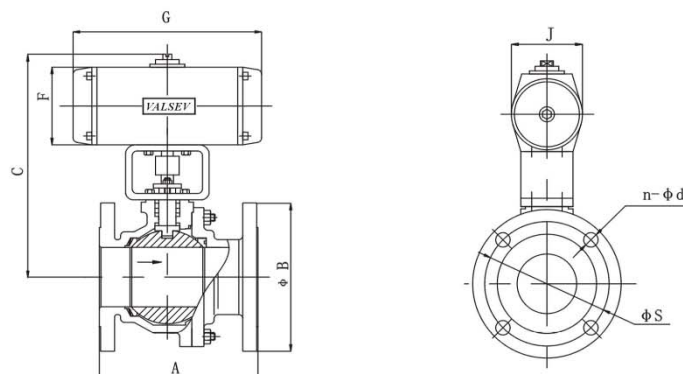
Actuator	Output Torque (N.m)	Nominal Diameter mm											
		15	20	25	32	40	50	65	80	100	125	150	200
VAR-60	14.3	1.00	0.65	0.25									
VAR-85	34.3	4.00	4.00	1.55	0.35	0.25							
VAR-105	40.7			2.05	0.85	0.50	0.35						
VAR-125	76			4.00	4.00	1.60	0.45	0.30					
VAR-140	134					4.00	1.60	0.65	0.55				
VAR-160	166						4.00	1.55	1.35	0.10			
VAR-210	455							4.00	4.00	0.60	0.40		
VAR-240	553									1.32	0.42		
VAR-270	586									1.50	0.45	0.20	
VAR-300	1025									2.25	1.65	0.45	0.20
VAR-350	1492									4.00	2.65	2.95	0.35
VAR-400	2109										4.00	4.00	0.50

Operation Torque List (Nm) (for reference only)

Nominal Pressure Mpa	Nominal Diameter mm													
	15	20	25	32	40	50	65	80	100	125	150	200	250	300
1.6	10.4	13	18.2	26	39	52	78	110.5	169	247	390	1040	1560	2405
2.5、4.0	13	15.6	23.4	39	58.5	71.5	156	351	429	793	1352	1625	2015	3562
6.4	15.6	18.2	26	58.5	65	117	188.5	429	494	962	1430	1950	2990	4550

Note: if medium is dry gas, torque add 20%-30%.

**Dimensions of Soft Seal Fixed Ball Valve: (equipped with VA type horizontal cylinder actuator)**



Unit: mm

Nominal diameter mm	Actuator	A	φB	C	J	F	G	PN1.6MPa		PN2.5MPa		PN4.0MPa	
		A*	φB*					φS	N-φd	φS	N-φd	φS	N-φd
15	VAD·R-60	130 140	95	347	70	88	156	65	4-φ14	65	4-φ14	65	4-φ14
20	VAD·R-60	130 152	105	351	70	88	156	75	4-φ14	75	4-φ14	75	4-φ14
25	VAD·R-85	140 165	105	387	90	109	186	85	4-φ14	85	4-φ14	85	4-φ14
32	VAD·R-85	165 178	135	397	90	109	186	100	4-φ18	100	4-φ18	100	4-φ18
40	VAD·R-105	165 190	145	426	115	133	236	110	4-φ18	110	4-φ18	110	4-φ18
50	VAD·R-125	200 216	160	461	139	155	278	125	4-φ18	125	4-φ18	125	4-φ18
65	VAD·R-125	220 240	180	471	139	155	278	145	4-φ18	145	8-φ18	145	8-φ18
80	VAD·R-140	250 283	195	502	149	172	326	160	8-φ18	160	8-φ18	160	8-φ18
100	VAD·R-160	280 305	215 230	557	178	196	366	180	8-φ18	190	8-φ22	190	8-φ23
125	VAD·R-350	320 381	245 270	722	300	344	540	210	8-φ18	220	12-φ23	220	12-φ25
150	VAD·R-400	360 403	280 300	747	300	344	540	240	8-φ23	250	16-φ23	250	16-φ25
200	VAD·R-400	419 457	335 375	889	390	440	684	295	12-φ23	310	16-φ25	320	12-φ30

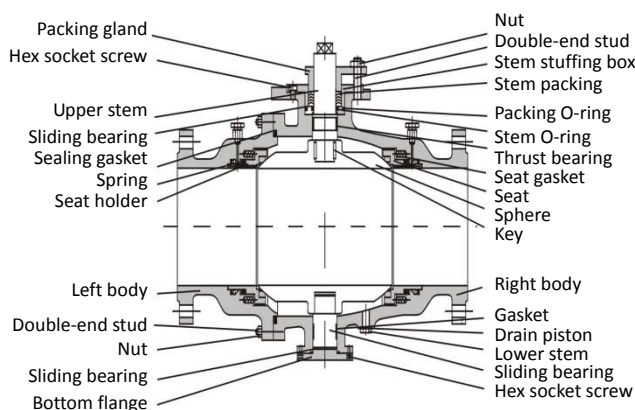
Note: flange connection standard in the table: GB/T-9113  
size with asterisk(\*) is for pressure rating PN2.5/ PN4.0 MPa

## K440 Hard Seal Fixed Ball Valve



K440 hard seal fixed ball valve is an on-off type high-performance globe valve, and its structure design makes sure hard seal fixed ball always keep the smallest open torque under large size and high pressure differential when compared with hard seal float ball valve. When at work, the force generated on the sphere by upstream medium pressure in the pipeline is totally passed to upper and lower bearing, and finely-controlled geometric tolerance and combination of special materials effectively reduce friction coefficient between the valve shaft and the bearing, and greatly reduce the friction. Valve sealing is realized by seat-loaded spring and medium pressure pushing the seat, always keeping close contact with the ball, ensuring no leaks under high pressure differential. The valve is the ideal choice for oil, natural gas, chemical industries.

Valve Structure Diagram



### Main Technical Parameters

Size	mm	50	65	80	100	125	150	200	250	300	350	400
	inch	2	2½	3	4	5	6	8	10	12	14	16
Rated Cv		320	430	570	1035	1690	2585	4120	5810	9285	13500	24000
Pressure Rating		ANSI CLASS150, 300, 600, 900, 1500 or PN1.6, 2.5, 4.0, 6.4, 10.0, 15.0, 25.0MPa										
Flow Characteristics		quick open (on-off type)										
Working Temp.		PTFE packing: -29~200°C; flexible graphite packing: 200~450°C										
Leakage		ANSI CLASS VI (bubble)										
Body Material		WCB, CF8, CF8M, CF3M or forging steel										
Ball Material		304, 316, 316L nitrogen treatment or surfacing cobalt-base alloy										
Seat Material		304, 316, 316L nitrogen treatment or surfacing cobalt-base alloy										

## Hard Seal Fixed Ball Valve Allowable Pressure Differential

Equipped with VAD type double-acting cylinder actuator (air pressure 0.5MPa) Unit: MPa

Actuator	Output Torque (N.m)	Nominal Diameter mm											
		50	65	80	100	125	150	200	250	300	350	400	
VAD-85	76	0.50	0.30										
VAD-105	127.3	1.65	0.60	0.50									
VAD-125	248	4.00	2.40	2.15	0.40								
VAD-140	415		4.00	4.00	0.60	0.40							
VAD-160	633				1.75	0.55	0.35						
VAD-210	1380				4.00	2.35	2.30	0.25	0.25				
VAD-240	1933					3.00	2.90	0.55	0.45				
VAD-270	2317					4.00	4.00	0.85	0.65	0.35			
VAD-300	3177							1.25	1.15	0.65	0.40	0.30	
VAD-350	4756							2.50	2.25	2.05	1.85	1.25	
VAD-400	6781							4.00	4.00	4.00	3.75	3.45	

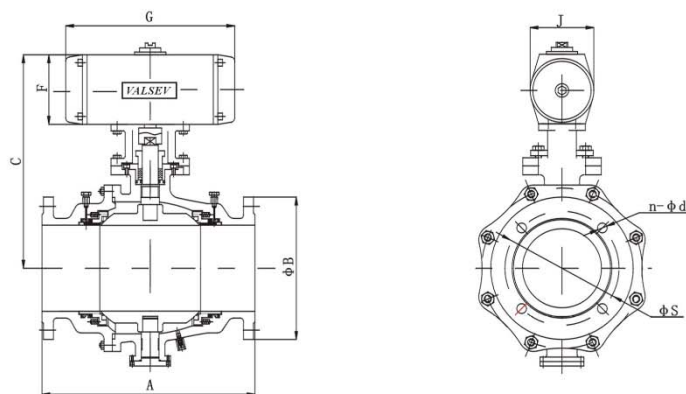
Equipped with VAR type single-acting cylinder actuator (air pressure 0.5MPa) Unit: MPa

Actuator	Output Torque (N.m)	Nominal Diameter mm											
		50	65	80	100	125	150	200	250	300	350	400	
VAR-125	76	0.50	0.30										
VAR-140	134	1.70	0.60	0.50									
VAR-160	166	2.10	2.00	1.25	0.30								
VAR-210	455	4.00	4.00	4.00	0.65	0.40							
VAR-240	553				0.85	0.45							
VAR-270	586				1.05	0.50	0.30						
VAR-300	1025				3.05	1.35	1.05	0.25					
VAR-350	1492				4.00	2.65	2.50	0.30	0.25	0.15			
VAR-400	2109					4.00	4.00	0.80	0.45	0.35	0.30	0.25	

Operation Torque List (Nm) (for reference only)

Nominal Pressure Mpa	Nominal Diameter mm														
	15	20	25	32	40	50	65	80	100	125	150	200	250	300	
1.6	12.48	15.6	21.84	31.2	46.8	62.4	93.6	132.6	202.8	296.4	468	1248	1872	2886	
2.5、4.0	15.6	18.72	28.08	46.8	70.2	85.8	187.2	421.2	514.8	951.6	1622.4	1950	2418	4274.4	
6.4	18.72	21.84	31.2	70.2	78	140.4	226.2	514.8	592.8	1154.4	1716	2340	3588	5460	

Note: if medium is dry gas, torque add 20%-30%.

**Dimensions of Hard Seal Fixed Ball Valve: (equipped with VA type horizontal cylinder actuator)**


Nominal diameter mm	Actuator	A	$\phi B$	C	J	F	G	PN1.6MPa		PN2.5MPa		PN4.0MPa	
		A*	$\phi B^*$					$\phi S$	N- $\phi d$	$\phi S$	N- $\phi d$	$\phi S$	N- $\phi d$
50	VAD · R-125	216	160	340	139	155	278	110	4- $\phi 14$	125	4- $\phi 18$	125	4- $\phi 18$
65	VAD · R-125	241	180	379	139	155	278	130	4- $\phi 14$	145	4- $\phi 18$	145	4- $\phi 18$
80	VAD · R-140	283	195	389	149	172	326	150	4- $\phi 18$	160	4- $\phi 18$	160	8- $\phi 18$
100	VAD · R-160	305	215 230	479	178	176	366	170	4- $\phi 18$	180	8- $\phi 18$	180	8- $\phi 18$
125	VAD · R-210	356 381	245 270	552	240	258	472	200	8- $\phi 18$	210	8- $\phi 18$	210	8- $\phi 18$
150	VAD · R-270	394 403	280 300 300	666	300	344	540	225	8- $\phi 18$	240	8- $\phi 23$	240	8- $\phi 23$
200	VAD · R-300	457 502	335 360 375	736	336	360	588	280	8- $\phi 18$	295	8- $\phi 23$	295	12- $\phi 23$
250	VAD · R-350	533 567	405 425 445	926	390	440	684	335	12- $\phi 18$	350	12- $\phi 23$	355	12- $\phi 25$
300	VAD · R-350	610 648	460 485 510	1059	390	440	684	395	12- $\phi 23$	400	12- $\phi 23$	410	12- $\phi 25$
350	VAD · R-400	686 762	520 550 270	1127	440	480	748	445	12- $\phi 23$	460	16- $\phi 23$	470	16- $\phi 25$
400	VAD · R-400	762 858	580 610 655	1393	440	480	748	495	16- $\phi 23$	515	16- $\phi 25$	525	16- $\phi 30$

Note: flange connection standard in the table: GB/T-9113  
size with asterisk(\*) is for pressure rating PN2.5/ PN4.0 MPa

## K460 Three-way Globe Valve

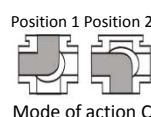
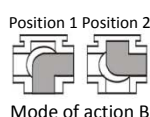
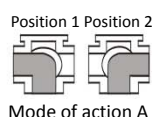


K460 three-way globe valve utilizes medium pressure and push the ball to sealing seat to realize sealing. PTFE is sealing material of the seat, which features self-lubricating property, small friction coefficient, strong resistance to corrosion, good sealing performance and is suitable for wide temperature range and so on. Standard ball are L-type two-port passage and T-type three-port passage. Changing relative angle of the ball and pipeline can realize various controls of the fluid from the tree passages, and L-type two-port passage plays a part of matching and T-type three-port passage plays a part of split-flowing and interflowing. Using one three-way valve can replace two or even three conventional valves, which not only makes pipeline designing more effective, but also saves costs for investment and operation, and it's suitable for direction control of chemical industry, refining equipment's three-way passage.

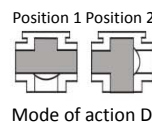
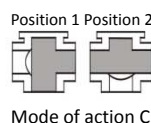
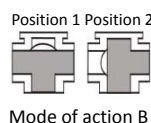
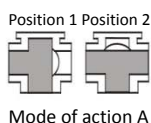
### Structural Features of Three-way Globe Valve

Three-way globe valve has L-type and T-type, and L-type just connects two mutually orthogonal pipelines, but cannot keep three pipelines interconnected and only functions as matching. T-type can make three orthogonal pipelines interconnected and cut the third pipeline, functioning as split-flowing (for detailed mode of action, see below). Concerning structure, three-way globe valve employs integral designing, four-side seat sealing, high-reliability.

#### L-type Ball



#### T-type Ball

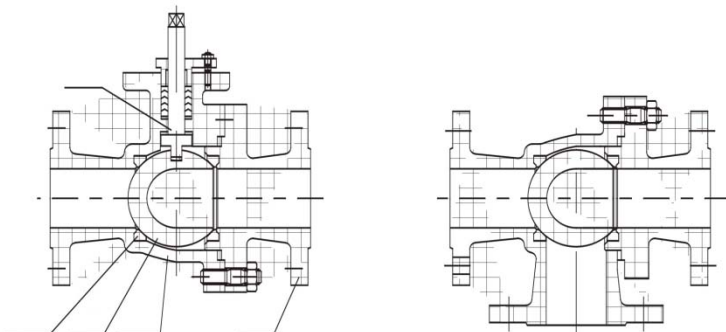


### Main Technical Parameters

Size	mm	15	20	25	32	40	50	65	80	100	150	200
	inch	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	4	6	8
Rated Cv		25	45	80	120	188	310	450	590	1070	2590	4100
Pressure Rating	ANSI CLASS150, 300 or PN1.6, 2.5, 4.0MPa											
Flow Characteristics	quick open (on-off type)											
Working Temp.	PTFE seat: -20~150°C; reinforced PTFE seat: -20~250°C											
Leakage	tight shutoff, no leak											
Body Material	WCB、CF8、CF8M、CF3M											
Ball Material	304、316、316L											
Seat Material	PTFE; reinforced PTFE											



### Part of Valve Structure Diagram



### Pneumatic Three-way Globe Valve Allowable Pressure Differential

Equipped with VAD type double-acting cylinder actuator (air pressure 0.5MPa) Unit: MPa

Actuator	Output Torque (N.m)	Nominal Diameter mm								
		15	20	25	32	40	50	65	80	100
VAD-60	34.9	3.90	3.90	3.90	3.90	2.05	0.60			
VAD-85	75.5					3.90	2.75	1.80	0.70	
VAD-105	127.3						3.90	3.00	1.90	0.6
VAD-125	248							3.90	3.90	1.50
VAD-140	415									3.05
VAD-160	633									3.90

Note: the table is applicable for reinforced PTFE seat; if PTFE seat is used, allowable pressure differential reduces 20%

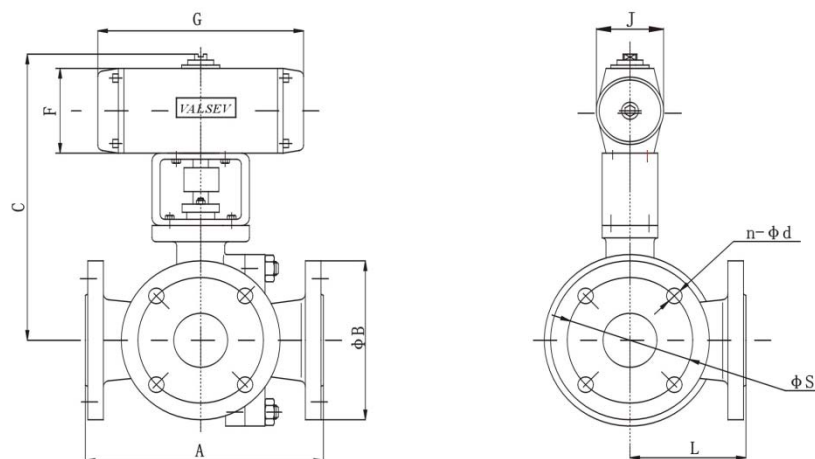
Equipped with VAR type single-acting cylinder actuator (air pressure 0.5MPa) Unit: MPa

Actuator	Output Torque (N.m)	Nominal Diameter mm								
		15	20	25	32	40	50	65	80	100
VAR-60	14.3	3.90	3.90	3.90	0.75					
VAR-85	34.3				3.90	3.05	1.05	0.85		
VAR-105	40.7					3.90	1.95	1.05		
VAR-125	76						2.80	2.00	0.85	0.30
VAR-140	134						3.90	3.55	3.20	0.55
VAR-160	166							3.90	3.90	2.05
VAR-210	445									3.90

Note: the table is applicable for reinforced PTFE seat; if PTFE seat is used, allowable pressure differential reduces 20%

# Dimensions of Pneumatic Three-way Globe Valve:

(equipped with VA type horizontal cylinder actuator)



Unit: mm

Nominal diameter mm	Actuator	A	φB	L	C	J	F	G	PN1.6MPa		PN2.5MPa		PN4.0MPa	
			φB*						φS	N-φd	φS	N-φd	φS	N-φd
15	VAD·R-60	180	95	90	266	70	88	156	65	4-φ14	65	4-φ14	65	4-φ14
20	VAD·R-60	190	105	95	271	70	88	156	75	4-φ14	75	4-φ14	75	4-φ14
25	VAD·R-60	200	115	100	282	70	88	156	85	4-φ14	85	4-φ14	85	4-φ14
32	VAD·R-60	210	140	105	289	70	88	156	100	4-φ14	100	4-φ18	100	4-φ18
40	VAD·R-85	230	150	115	294	90	109	186	110	4-φ14	110	4-φ18	110	4-φ18
50	VAD·R-85	250	165	125	324	90	109	186	125	4-φ14	125	4-φ18	125	4-φ18
65	VAD·R-105	280	185	135	343	115	133	236	145	4-φ14	145	4-φ18	145	4-φ18
80	VAD·R-125	310	200	155	377	139	155	278	160	4-φ14	160	8-φ18	160	8-φ18
100	VAD·R-140	350	215 230	175	425	149	172	326	180	4-φ14	190	8-φ22	190	8-φ22

Note: flange connection standard in the table: GB/T-9113  
size with asterisk(\*) is for pressure rating PN2.5/ PN4.0 MPa

## K480 Pneumatic Fluorine Lining Globe Valve

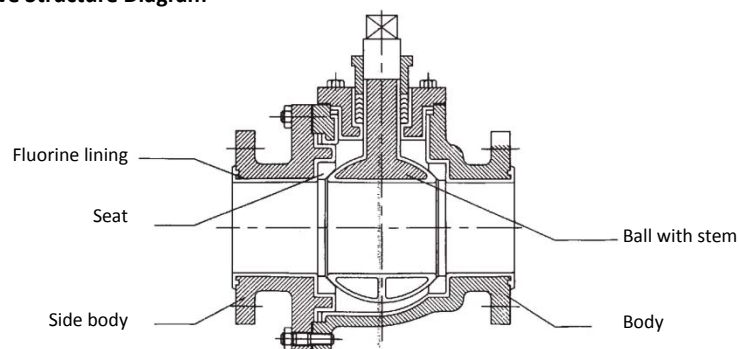


K480 pneumatic fluorine lining globe valve is finely casted, after a shot peening, and manufactured with grooves, and the body is lined with fluoropolymer, ensuring a good firm bond of lining material to the metallic matrix and two-piece body reduces potential leaking. Precisely-designed and manufactured seal seat uses PTFE as standard sealing material, low friction coefficient, strong resistance to corrosion. Integral casting of the stem and the ball ensures load capacity of the stem, making on and off more reliable and stable.

Fluorine lining globe valve is available of kinds of lining materials, such as FEP (F46, FEP), PEA (PFA) and so on, which exhibit chemical resistance, small viscosity, strong fastness, low permeability and etc.

This series of valves features fast on and off, low flow resistance, easy operation, especially suitable for chemical, petrochemical, papermaking and water treatment industries and etc.

### Part of Valve Structure Diagram



### Main Technical Parameters

Size	mm	50	65	80	100	125	150	200	250	300	350	400
	inch	2	2½	3	4	5	6	8	10	12	14	16
Rated Cv		320	430	570	1040	1690	2590	4120	5810	9300	13500	24000
Pressure Rating		ANSI CLASS150 or PN1.6MPa										
Flow Characteristics		quick open (on-off type)										
Working Temp.		-20 ~ 150℃										
Leakage		tight shutoff, no leak										
Body Material		WCB lining fluorine polymer, CF8 lining fluorine polymer										
Ball Material		304 lining fluorine polymer										
Seat Material		PTFE										

Performance Table of Conventional Lining Materials for Globe Valve

Performance	Name		PTFE	PCTFE	PVDF	FEP	PFA	
	Project	Abbr. Code Unit	F <sub>4</sub>	F <sub>3</sub>	F <sub>2</sub>	F <sub>46</sub>	F <sub>A</sub>	
Physical Performance	Proportion r	g/cm³	2.1~2.2	2.1~2.2	1.76	2.1~2.2	2.1~2.2	
	Absorptivity	%	0.001~0.005	≤0.005	0.04	≤0.01	≤0.01	
	Shrinkage	%	1~5	1~2.5	2.0	2~5	1~5	
	Expansion Coefficient	10-5/K	10~12	4.5~7.0	8.5~15.3	8.3~10.5	8~12	
	Brittle Temp. T <sub>1</sub>	℃	-180~-195	-80~-195	-62	-260	-180~-195	
	Continuous Heat Resistance T <sub>2</sub>	℃	260	120~190	150	204	260	
	Suggested Operating Temp T <sub>3</sub>	℃	≤180	≤120	≤100	≤150	≤180	
Mechanical Performance	Rigidity	Shore	D50~65	D74~78	D80	(R45)	D50~65	
	Friction Coefficient f	—	0.06	0.3~0.4	0.14~0.17	0.06~0.11	0.06~0.11	
	Tensile Strength ab	Mpa	13.7~24.5	31.3~39.2	45~48.3	20.2~24.5	14~28	
	Bending Strength aw	Mpa	10.7~13.7	53.9~68.6	—	—	15~28	
	Compression Strength ay	Mpa	111	80.3~50.9	68.6	—	111	
	Impact Strength ak	KJm	16	12.7~16.6	19.7	—	1+	
	Extension l	%	250~350	30~190	30~300	250~270	300~500	
	Breakdown Voltage v	KV/mm	25~40	19.7	10.2	40	25~40	
Handling Characteristics	Compression Molding		good	good	good	good	good	
	Injection Molding		-	good	good	good	good	
	Lamination		good	good	good	good	good	
	Coating		good	good	good	good	good	
Resistance to Corrosion Property	Medium	Density (%)	Temp (℃)	PTFE	PTFE	PVDF	FEP	PFA
	Vitriol	10~98	Room temp.~100	A	A~B	A~B	A	A
	Nitric Acid	5~98	Room temp.~100	A	A	A	A	A
	Muriatic Acid	10~38	Room temp.~100	A	A	A	A	A
	Acetic Acid	10~100	Room temp.~100	A	A~B	A~B	A	A
	Chromic Acid	50~100	Room temp.~100	A	A~B	A~B	A	A
	Phosphoric Acid	50~85	Room temp.~100	A~B	A	A	A~B	A~B
	THMS	100	Room temp.	C	D	D	C	C
	酸酸铜	15	Room temp.	A	B	B	A	A
	Oxalic Acid	100	Room temp.	B	C	C	A	B
	醋酸乙酯	100	Room temp.	B	C	C	C	B
	Gas	100	Room temp.	A	A	A	A	A
	Hydrogen Peroxide	3~30	Room temp.	A	A~B	A~B	A	A
	Aqua Regia	—	Room temp.	A	A	A	A	A
	Nitrobenzene	100	Room temp.	A	.B	B	A	A
	Caustic Soda	10~50	Room temp.~100	A	A~B	A~B	A	A
	Sodium Hypochlorite	—	70	A	A	A	A	A
	Hydroxic Acid	40~99	-10~30	A~B	B	B	A~B	A~B
	Oleum	20	Room temp.	A	B	B	A	A
	Acrylonitrile	—	Room temp.	B	C	C	B	B
	Aniline	100	Room temp.	B	B	B	B	B
	Benzene	100	Room temp.	B	C	C	C	B
	Butyl Acetate	100	Room temp.	B	C	C	B	B
	Carbon Tetrachloride	reagent grade	Room temp.	B	C	C	B	B

\*A, B, C, D means resistance to corrosion property, four grades: excellent, good, ok, bad.

## Fluorine Lining Globe Valve Allowable Pressure Differential

Equipped with VAD type double-acting cylinder actuator (air pressure 0.5MPa) Unit: MPa

Actuator	Output Torque (N.m)	Nominal Diameter (mm)											
		15	20	25	32	40	50	65	80	100	125	150	200
VAD-60	34.9	1.60	1.60	1.50	1.35	0.75							
VAD-85	75.5				1.60	1.60	1.35	0.65					
VAD-105	127.3						1.60	1.45	0.85				
VAD-125	248							1.60	1.60	0.75	0.50		
VAD-140	415									1.60	1.05	0.65	
VAD-160	633										1.60	1.05	0.65
VAD-210	1380											1.60	1.15
VAD-270	2317												0.60

Note: the table is suitable for PFA, FEP, PVKF only, and other lining material will need some changes.

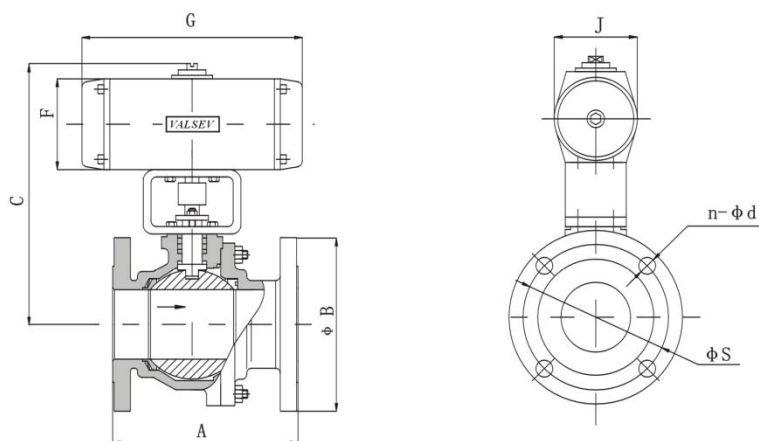
Equipped with VAR type single-acting cylinder actuator (air pressure 0.5MPa) Unit: MPa

Actuator	Output Torque (N.m)	Nominal Diameter (mm)											
		15	20	25	32	40	50	65	80	100	125	150	200
VAR-60	14.3	1.60	1.25	0.60	0.25								
VAR-85	34.3		1.60	1.35	1.20	0.55							
VAR-105	40.7			1.60	1.55	0.75	0.35						
VAR-125	76					1.45	1.05	0.8	0.55				
VAR-140	134						16.0	16.0	1.05	0.65	0.30		
VAR-160	166								1.60	1.15	0.60	0.25	
VAR-210	445									1.60	1.45	1.25	0.35
VAR-270	586											1.60	0.55
VAR-300	1025												1.00
VAR-350	1492												1.60

Note: the table is suitable for PFA, FEP, PVKF only, and other lining material will need some changes.

## Dimensions of Pneumatic Fluorine Lining Globe Valve:

(equipped with VA type horizontal cylinder actuator)



Nominal diameter mm	Actuator	A	φB	C	J	F	G		PN1.0MPa		PN1.6MPa	
									φS	N-φd	φS	N-φd
15	VAD·R-60	130	95	286	70	88	176	196	65	4-φ14	65	4-φ14
20	VAD·R-60	130	105	290	70	88	176	196	75	4-φ14	75	4-φ14
25	VAD·R-60	140	115	302	70	88	176	196	85	4-φ14	85	4-φ14
32	VAD·R-85	165	140	330	90	109	186	214	100	4-φ18	100	4-φ18
40	VAD·R-85	165	150	335	90	109	186	214	110	4-φ18	110	4-φ18
50	VAD·R-105	203	165	338	115	133	236	288	125	4-φ18	125	4-φ18
65	VAD·R-105	222	185	387	115	133	236	288	145	4-φ18	145	4-φ18
80	VAD·R-125	241	200	419	138	155	278	334	160	8-φ18	160	8-φ18
100	VAD·R-140	305	220	462	149	172	326	420	180	8-φ18	180	8-φ18
125	VAD·R-160	356	250	505	178	196	366	494	210	8-φ18	210	8-φ18
150	VAD·R-210	394	285	524	240	258	412	524	240	8-φ22	220	8-φ22
200	VAD·R-270	457	340	661	300	344	540	748	295	8-φ22	295	12-φ22

Note: 1. Dimensions in G row: left is dimensions for VAD-type double-acting cylinder actuator, and right for VAR-type.

2. Flange standard: GB/T9113

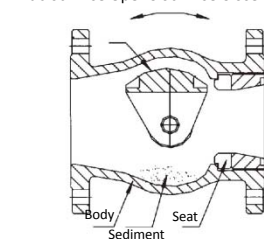
## K490 Pneumatic Wear-resistant Globe Valve



Part of Valve Structural Diagram

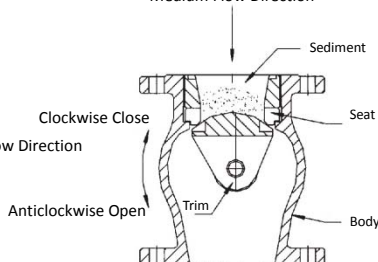
K490 pneumatic wear-resistant globe valve utilizes advanced grinding machine and manufacturing technique, and the higher precision of the circular degree of the ball, the better quality of its surface. After facing up with the seat, it can get very good sealing property by utilizing self-lubrication of ZrO<sub>2</sub> pottery. Parts of the valve that contact with medium are structural ceramics which features high chemical stability and high hardness (Rockwell hardness HRC90) second only to diamond, therefore, the valve exhibits high wear resistance, corrosion-resistance, erosion-resistance, good heat-shielding performance as well as small thermal expansion. The valve has absolute incomparable advantages when applied in particle medium of high hardness, or corrosive medium containing soft particle, and it's the only valve that is suitable for mediums of these kinds, and also widely used in flue gas desulfurization system, deslagging system and burning system in power plant; brining and distilling processing in soda factory; pulp-control system in papermaking plant and etc., and can be used in on and off and control of other strong corrosive and strong wearing fluid medium as well.

Anticlockwise Open Clockwise Close



Picture 1 Horizontal Pipeline Assembly

Medium Flow Direction



Picture 2 Vertical Pipeline Assembly

### Main Technical Parameters

Size	mm	32	40	50	65	80	100	125	150	200	250	300	350	400
	inch	1¼	1½	2	2½	3	4	5	6	8	10	12	14	16
Rated Cv		35	60	120	180	280	430	725	1100	1800	2800	4500	7200	11000
Pressure Rating	ANSI CLASS150, 300, 600 or PN1.6, 2.5, 4.0, 6.4, 10.0MPa													
Flow Characteristics	quick-open (on-off type)													
Working Temp.	-29℃~+425℃													
Leakage	CLASS V or VI													
Body Material	WCB, CF8, CF8M, CF3M or inner surface spray welding carbon tungsten alloy													
Ball Material	304, 316, 316L with nanometer ceramics													
Seat Material	304, 316, 316L with nanometer ceramics													



## Pneumatic Wear-resistant Globe Valve Allowable Pressure Differential

Equipped with VAD type double-acting cylinder actuator (air pressure 0.5MPa) Unit: MPa

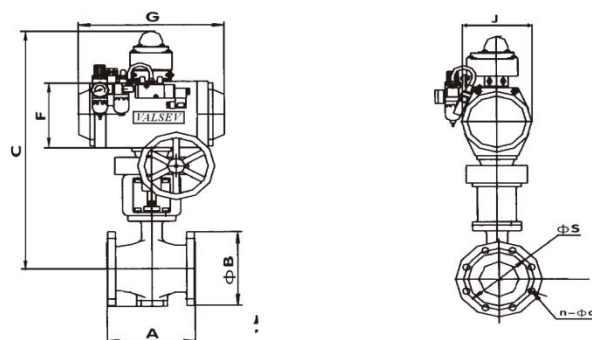
Actuator	Output Torque (N.m)	Nominal Diameter mm											
		15	20	25	32	40	50	65	80	100	125	150	200
VAD-60	34.9	4.00	4.00	1.55	1.35								
VAD-85	75.5			4.00	4.00	1.60	0.45						
VAD-105	127.3					4.00	1.45	0.55	0.50				
VAD-125	248						4.00	2.35	2.05	0.30			
VAD-140	415							4.00	4.00	0.50	0.35		
VAD-160	633									1.55	0.45	0.30	
VAD-210	1380									4.00	2.15	2.00	0.20
VAD-240	1933										3.22	2.50	0.40
VAD-270	2317										4.00	4.00	0.65
VAD-300	3177												1.00
VAD-350	4756												2.30
VAD-400	6781												4.00

Equipped with VAR type single-acting cylinder actuator (air pressure 0.5MPa) Unit: MPa

Actuator	Output Torque (N.m)	Nominal Diameter mm											
		15	20	25	32	40	50	65	80	100	125	150	200
VAR-60	14.3	1.00	0.65	0.25									
VAR-85	34.3	4.00	4.00	1.55	0.35	0.25							
VAR-105	40.7			2.05	0.85	0.50	0.35						
VAR-125	76			4.00	4.00	1.60	0.45	0.30					
VAR-140	134					4.00	1.60	0.65	0.55				
VAR-160	166						4.00	1.55	1.35	0.10			
VAR-210	455							4.00	4.00	0.60	0.40		
VAR-240	553									1.32	0.42		
VAR-270	586									1.50	0.45	0.20	
VAR-300	1025									2.25	1.65	0.45	0.20
VAR-350	1492									4.00	2.65	2.95	0.35
VAR-400	2109										4.00	4.00	0.50

### Dimensions of Pneumatic Wear-resistant Globe Valve:

(equipped with VA type horizontal cylinder actuator)



Unit: mm

Nominal diameter mm	Actuator	A	ΦB	C	J	F	G	PN1.6MPa		PN2.5MPa		PN4.0MPa	
		A*	ΦB*					ΦS	N-Φd	ΦS	N-Φd	ΦS	N-Φd
15	VAD·R-60	130	95	347	70	88	156	65	4-Φ14	65	4-Φ14	65	4-Φ14
		140											
20	VAD·R-60	130	105	351	70	88	156	75	4-Φ14	75	4-Φ14	75	4-Φ14
		152											
25	VAD·R-85	140	105	387	90	109	186	85	4-Φ14	85	4-Φ14	85	4-Φ14
		165											
32	VAD·R-85	165	135	397	90	109	186	100	4-Φ18	100	4-Φ18	100	4-Φ18
		178											
40	VAD·R-105	165	145	426	115	133	236	110	4-Φ18	110	4-Φ18	110	4-Φ18
		190											
50	VAD·R-125	200	160	461	139	155	278	125	4-Φ18	125	4-Φ18	125	4-Φ18
		216											
65	VAD·R-125	220	180	471	139	155	278	145	4-Φ18	145	8-Φ18	145	8-Φ18
		240											
80	VAD·R-140	250	195	502	149	172	326	160	8-Φ18	160	8-Φ18	160	8-Φ18
		283											
100	VAD·R-160	280	215	557	178	196	366	180	8-Φ18	190	8-Φ22	190	8-Φ23
		305	230										
125	VAD·R-350	320	245	722	300	344	540	210	8-Φ18	220	12-Φ23	220	12-Φ25
		381	270										
150	VAD·R-400	360	280	747	300	344	540	240	8-Φ23	250	16-Φ23	250	16-Φ25
		403	300										
200	VAD·R-400	419	335	889	390	440	684	295	12-Φ23	310	16-Φ25	320	12-Φ30
		457	375										

Note: flange connection standard in the table: GB/T-9113  
size with asterisk(\*) is for pressure rating PN2.5/ PN4.0 MPa

## VA-type Horizontal Cylinder Actuator



VA-type horizontal cylinder actuator employs the world's advanced gear rack structure, small in size, light in weight, large output force, and balanced operation. Two structures are available, double-acting (VAD) and single-acting (VAR) spring-return. Fast shutoff or fast open can be realized by equipping a solenoid valve, electric signal feedback and indication by equipping a limit switch, and proportion control by quipping a valve positioner. It's an economical angular-travel actuator, having both functions of adjusting and shutoff, and can be assembled with rotary valves like butterfly valve, O-type globe valve, V-type globe valve to realize long-distance centralized control, widely used in automatic control system in oil, chemical, light, food, pharmacy, papermaking industries and etc.

### Structure Features:

- ✧ Advanced gear rack double-piston structure, angular-travel output.
- ✧ Cylinder material is die-casting aluminium, light in weight, nice appearance.
- ✧ Square, flat output shaft, and easy manual operation on the top.
- ✧ Manual operating structure can be assembled at the bottom.
- ✧ Stroke adjusting bolts of both ends have adjustable open angle.
- ✧ Flitch-type solenoid valve can be assembled directly.
- ✧ Electric signal feedback and indication can be realized by assembling a limit switch.
- ✧ ISO5211 standard assembled connecting flange provides convenience.

### Actuator Output Torque (double-acting)

Unit: N • m

Double-acting Actuator Model	Input Air Pressure (unit:MPa)								
	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
VAD-32	2.3	3.5	4.7	5.9	7.7	8.2	9.4	9.7	11.8
VAD-45	5.8	8.7	11.6	14.6	17.5	20.4	23.3	26.3	29.2
VAD-60	13.9	20.9	27.9	34.9	41.9	48.9	55.9	62.8	69.8
VAD-85	30.2	45.3	60.4	75.5	90.6	105.7	120.8	135.9	151
VAD-105	50.9	76.4	101.9	127.3	152.8	178.3	203.8	229.3	254.7
VAD-125	99	148	198	248	297	347	397	446	496
VAD-140	166	249	332	415	498	581	664	747	830
VAD-160	253	379	506	633	759	886	1012	1139	1266
VAD-210	552	828	1104	1380	1656	1932	2208	2484	2760
VAD-270	927	1390	1854	2317	2781	3244	3708	4171	4635
VAD-300	1270	1906	2541	3177	3812	4447	5083	5718	6354
VAD-350	1920	2853	3805	4756	5707	6659	7610	8561	9513
VAD-400	2712	4068	5425	6781	8137	9494	10850	12206	13563

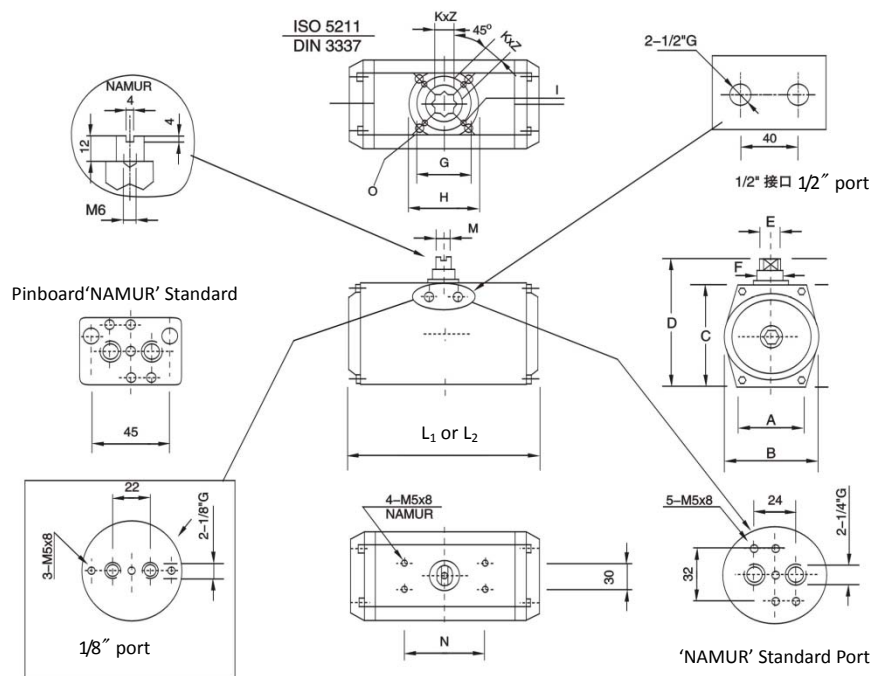
**Actuator Output Torque (single-acting) Unit: N • m**

Single-acting Actuator Model	No. of Spring (one-side)	Input Air Pressure (unit:MPa)												Spring Output Torque	
		0.3		0.4		0.5		0.6		0.7		0.8			
		0	90	0	90	0	90	0	90	0	90	0	90	0	90
VAR-45	3	4.7	2.2	7.6	5.1	10.6	8.1	13.5	11	16.4	13.9	19.3	16.8	4	6.5
	4			6.2	2.9	9.2	5.9	12.1	8.8	15	11.7	17.9	14.6	5.4	8.7
	5					7.8	3.7	10.7	6.6	13.6	9.5	16.5	12.4	6.8	10.9
	6							9.4	4.5	12.3	7.4	15.2	10.3	8.1	13
VAR-60	3	13.5	5.5	20.3	12.5	27.3	19.5	34.3	26.5	41.3	33.5	48.3	40.5	7.6	15.4
	4			17.7	7.3	24.7	14.3	31.7	21.3	38.7	28.3	45.7	35.3	10.2	20.6
	5					22.2	9.2	29.2	16.2	36.2	23.2	43.2	30.2	12.7	25.7
	6							26.6	11	33.6	18	40.6	25	15.3	30.9
VAR-85	3	26.4	14.4	41.5	29.5	56.6	44.6	71.7	59.7	86.8	74.8	101	89.9	18.9	30.9
	4			35.2	19.2	50.3	34.3	65.4	49.4	80.5	64.5	95.7	79.6	25.2	41.2
	5					44	23.9	59.1	39	74.2	54.1	89.3	69.2	31.5	51.6
	6							52.8	28.7	67.9	43.8	83	58.9	37.8	61.9
VAR-105	3	37.3	11.5	62.8	37	88.2	62.4	113	87.9	139	113	164	138	39.1	64.9
	4			49.8	15.3	75.2	40.7	100	66.2	126	91.7	151	117	52.1	86.6
	5					62.2	19.3	87.7	44.8	113	70.3	138	95.8	65.1	108
	6							74.6	23.8	100	49.3	125	74.8	78.2	129
VAR-125	3	74.4	19	124	69	174	119	223	168	274	218	324	268	73.6	129
	4			99.8	26	149	76	199	125	249	175	299	225	98.2	172
	5					126	33	175	82	225	132	275	182	122	215
	6							150	39	200	89	250	139	147	258
VAR-140	3	158	39	241	122	324	205	407	288	490	371	573	454	91.3	210
	4			211	51	294	134	377	217	460	300	543	383	121	281
	5					263	64	346	147	429	230	512	313	152	351
	6							316	77	399	160	482	243	182	421
VAR-160	3	207	29	334	156	461	283	587	409	714	536	840	662	172	350
	4			276	39	403	166	529	292	656	419	782	545	230	467
	5					345	49	471	175	598	302	724	428	288	584
	6							414	59	541	186	667	312	345	700
VAR-210	3	532	127	808	403	1084	679	1360	955	1636	1231	1921	1507	296	701
	4			709	169	985	445	1261	721	1537	997	1813	1273	395	935
	5					886	211	1162	487	1438	763	1714	1039	494	1169
	6							1063	253	1339	529	1615	805	593	1403
VAR-270	3	810	51	1274	515	1791	1032	2201	1442	2664	1905	3128	2369	580	1339
	4			1080	69	1597	586	2007	996	2470	1459	2934	1923	774	1785
	5					1404	139	1814	549	2277	1012	2741	1476	967	2232
	6							1621	103	2084	566	2548	1030	1160	2678
VAR-300	3	1096	292	1731	927	2367	1563	3002	2198	3637	2833	4273	3469	810	1614
	4			1461	389	2097	1025	2732	1660	3367	2295	4003	2931	1080	2152
	5					1827	487	2462	1122	3097	1757	3733	2393	1350	2690
	6							2192	584	2827	1219	3463	1855	1620	3228
VAR-350	3	1733	405	2725	1357	3676	2308	4627	3259	5597	4211	6530	5162	1080	4080
	4			2365	541	3316	1492	4267	2443	5219	3395	6170	4346	1440	3264
	5					2956	676	3907	1627	4859	2579	5810	3530	1800	4080
	6							3047	811	3999	1763	4950	2714	2660	4896
VAR-400	3	2418	564	3775	1921	5131	3277	6487	4633	7894	5990	9200	7346	1650	3504
	4			3225	753	4581	2109	5937	3465	7294	4822	8650	6178	2200	4672
	5					4031	941	5387	2297	6744	3654	8100	5010	2750	5840
	6							4837	1129	6194	2486	7550	3842	3300	7008

Note: 1.Spring output torque means under the condition of losing air, spring output torque when stroke is at 0 and 90.

2. On both ends of the actuator can be put different quantities of springs, like put 3 on one end, and 4 on the other, which is 3+4.

## Actuator Mounting Dimension



Model	A	B	C	D	E	F	G	H	I	K	L <sub>1</sub>	L <sub>2</sub>	M	N	O	Z	Port Thread
45	48	58	65	95	12	14	Φ36	Φ50	M5x8	11	156	166	10	80	M6x10	15	1/8"G
63	60	70	88	118	12	18	Φ50	Φ70	M6x10	14	176	196	10	80	M8x13	15	1/8"G
83	67	90	109	139	14	18	Φ50	Φ70	M6x10	19	186	214	10	80	M8x13	17	1/8"G
105	85	115	133	163	19.5	25	Φ50	Φ70	M6x10	19	236	288	14	80	M8x13	20	1/8"G
125	103	139	155	185	28	40	Φ70	Φ102	M8x13	22	278	334	20	130	M10x16	25	NAMUR1/4"G
140	107	149	172	202	28	40	Φ102	Φ125	M10x15	27	236	420	20	130	M12x18	30	NAMUR1/4"G
160	128	178	196	226	36	40	Φ102	Φ125	M10x16	27	366	494	28	130	M12x20	30	NAMUR1/4"G
210	140	240	258	288	45	60		Φ140		36	472	624	32	130	M16x22	50	NAMUR1/4"G
270	200	300	344	374	45	60		Φ165		46	540	748	32	130	M20x25	60	NAMUR1/2"G
300	216	336	360	390	45	60		Φ165		46	588	846	32	130	M20x20	60	NAMUR1/2"G
350	274	390	440	470	45	60		Φ165		50	684	932	32	130	M20x28	60	NAMUR1/2"G
400	330	440	480	510	45	60		Φ180		60	748	1066	32	150	M20x28	70	NAMUR1/2"G

Note: 1. L<sub>1</sub>, L<sub>2</sub> respectively are double-acting and single-acting actuator dimensions.

2. K, Z respectively are four-edge distance and depth.

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