510D
520D

KOSO

VELOCITY CONTROL VECTOR™ TRIM CONTROL VALVE

Standard Specifications

Gain Competitive Edge with KOSO

KOSO is a leading industrial customized control valve manufacturer with strong in-house R&D capabilities. Committed to delivering high-quality, ISO-9001 certified valve systems, KOSO offers a wide range of products designed to meet evolving industry needs.

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Overview

The 510D (Globe) / 520D (Angle) series control valves meet low noise and anti-cavitation requirements by incorporating a disk-stack instead of ported or multi drilled hole cages. It gives the benefits of velocity control for severe duty applications, while the features of standard valve configurations are maintained.

Key Features & Benefits

Multiple Stages of Pressure Reduction	Up to 30 turns can be provided subjected to the requirements of Low-Noise, Anti–Cavitation and Severe Service applications.
Quick Change Trim	The quick-change trim design has a clamped-in seat ring using valve bonnet. It allows the trim parts to be removed and re-installed while the valve body is still in the pipeline. This results in quicker maintenance and inspection.
High Flow Capacity	High flow capacity with better controllability. Streamlined flow passages to optimize capacity and stable flow control with high rangeability.
Characterization	Inherently characterized trims are available with linear & Modified Equal percentage. Special Cv options are available on request.
Fine Flow Control	Disk Stack design are characterized to provide fine flow control and high rangeability as well as velocity control. Further customization can be made to meet specific application requirements.
Fluid Velocity Control	Fluid velocity control at trim exit addresses problems at their sources, resulting into vibration free operation, reduces velocity-induced erosion, eliminates cavitation caused trim damages, longer cycles between maintenances, low noise operation and eliminates costly additional equipment like baffle plates, silencers, acoustic lagging etc.
Pressure Drop and Capacity Needs	Designed to meet the pressure drop and capacity needs of the applications while improving reliability, efficiency and plant output. Wide control rangeability eliminates the need for a secondary valve for low range flow control.
“Edge” Contact Seating	“Edge” contact seating with extra shut-off force provides repeatable tight shut-off, eliminating leakage losses, recurring maintenance cost and unplanned system shutdowns.

Product specifications

Design Standard & Material Standard	• Valve design - ASME B16.34 • Flange design - ASME B16.5 & ASME B16.47 • Butt weld end connection - ASME B16.25 • Socket weld end connection - ASME B16.11 • Material compliance to ASME, ASTM, EN or Custom standards
Industry Served	• Power, Oil & Gas • FPSO, Onshore, Offshore • LNG, Fertilizer, Steel • Refinery, Petrochemical
Quality Standard Compliance	• Quality Management System as per ISO 9001 • Quality Management System as per API Spec Q1 • PED/CE as per 2014/68/EU & ATEX 2014/34/EU
Type of Actuation	• Pneumatic actuator • Hydraulic actuator • Electrical actuator
Key Applications	• Anti-surge valve • Blow-off valve • Spray water valve • Soot blower valve • Cryogenic valve/High temperature valve
Certification	• IBR, SIL • PED/CE Marking, ATEX • CRN, TRCU

Comparison Between Vector™ Valve Profile & Conventional Valve Profile

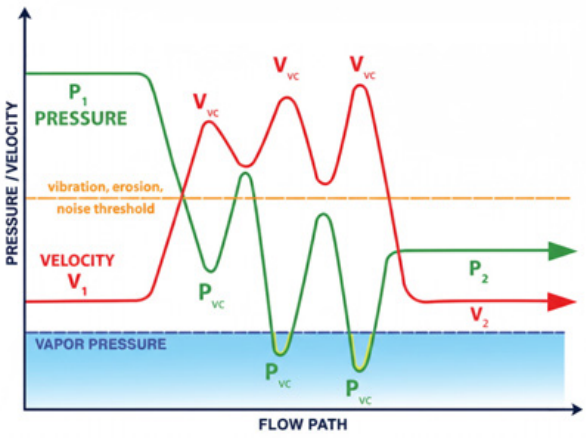


Figure 1.1 : Conventional Multi-hole cage design leads to insufficient velocity control

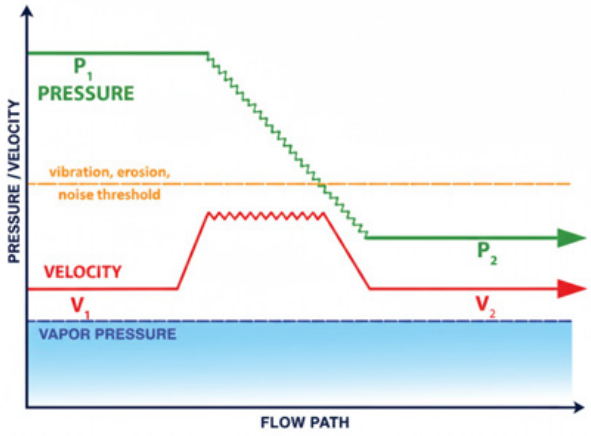


Figure 1.2: Vector™ Multi-path, Multi-turn path control the velocity appropriately

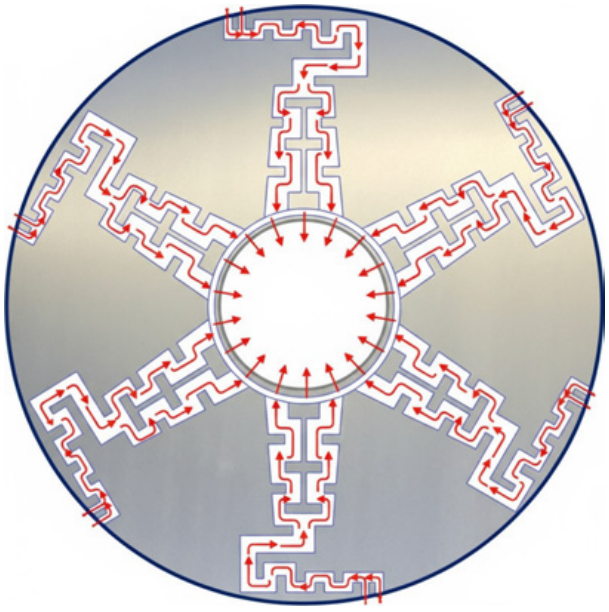


Figure 2.1 : Vector™ disk flow paths, Over the plug

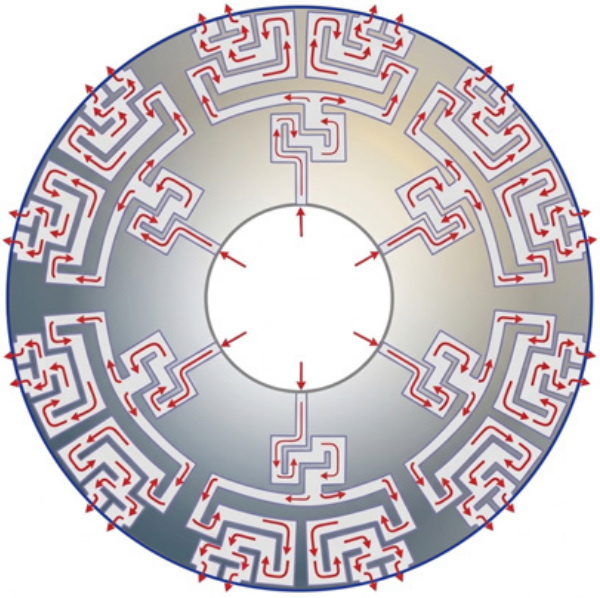


Figure 2.2 : Vector™ disk flow paths under the plug

▶ Where Vector™ Stands Out

Severe service valves are often associated with challenges such as vibration, noise, cavitation and erosion.

In Vector™ valves, the pressure reduction is achieved through a disk stack composed of multiple disks and each disk contain numerous right-angled flow passages. As the fluid flows through these tortuous paths, each stage contributes to a gradual reduction in pressure.

It thus permits a gradual pressure recovery without allowing the fluid to exceed the acceptable velocity limit. This controlled process prevents excessive fluid velocity, thereby minimizing vibration & cavitation.

In applications that generate high exit noise (SPL), the conventional approach is to mitigate noise along the flow path by installing a series of orifice plates downstream of the valve. However, this method compromises the controllability of the final control element, as orifice plates function as static Cv devices. The KOSO Vector™ trim addresses this issue by controlling noise at the source by limiting fluid velocity through a, multi path letdown design.

Another common challenge with conventional multi-stage valves are to achieve high rangeability or a high rated Cv due to the inherent flow restrictions in their design. This is usually seen in applications like Anti-Surge Valve, Combined Feedwater Regulating valve (Startup + Normal Operation) etc.

Due to the advanced disk stack design, long stroke and superior flow characteristics, the Vector™ trim combines low-load flow and full-load flow functions into a single, efficient control valve. This design delivers exceptional rangeability—far exceeding the typical 30:1 limit of standard valves. Vector™ trims can be designed with bi-linear characteristics with tortuous path on the lower stroke and drilled holes at the top, suitable for Anti-surge valve applications.

Higher the Sizing indices like $F_{L,}$ X_T & $K_{C,}$ better the noise abatement, lower the vibration and lower the chance of cavitation or erosion.

Sizing Indices comparison with conventional valve:

Description	F_L	X_T	K_C
Conventional Valves	0.94	0.74	0.85
Vector Valves	~ 1	~ 1	~ 1

With its unique flow control and energy dissipation characteristics, Vector™ valves became the choice of plant engineers for most challenging and severe duty applications.

▶ Engineered to Perfection

KOSO is an engineering solutions company specialized in severe service control valve applications. Our expertise lies in developing highly engineered, tailor made valve solutions refined and perfected over decades. To centralize our engineering knowledge and experience, KOSO has a dedicated team focused exclusively on the design of Vector™ valves.

Standard Specification

Velocity Control Vector™ Trim Control Valve 510D/520D

Series	510D - Globe / 520D - Angle
Body Size	1” ~ 24” (DN25 ~ DN600) (For higher sizes, consult with factory)
Plug Form	Unbalanced & Pressure Balanced
Characteristics	Linear, EQ%, Modified Linear, Modified EQ%
Trim Material & Treatment	300 Series, 400 Series,17-4 PH, Alloy steels, Duplex SS, Alloy 625, Alloy 825, Monel, Hastelloy C, Special Hardening treatment - Stellite overlay. (Stellite Seat - SS / Stellite Face - SF)
Body Rating	ASME Class 150, 300, 600, 900, 1500, 2500 (For EN Class or PN Class consult with factory)
Body Connections	Flanged (RF, FF, RTJ), Weld ends (Socket weld end : 2" and below, Butt weld end : 3" and above)
Face to Face Dimension	ISA / KOSO Standard / Special (Consult with factory)
Body & Bonnet Material	WCB, WCC, WC6, WC9, C5, C12A, LCC, LCB, CF8, CF8M, CF3M, CF8C, Duplex SS, Alloy 625, Alloy 825, Monel, Hastelloy C and Copper alloy Steels. Cladding on body internal is available upon request.
NACE (as applicable)	NACE MR0175, NACE MR0103
Bonnet Types	Standard type: -17 °C ~ +230 °C, Fin-Extension type: -45 °C ~ -17 °C, or above +230 °C, Long-Extension type: -196 °C ~ -45 °C, Option: Bellow-seal bonnet. (Note : The above temperature limits are based on operating conditions)
Gland Packing	TFE V-ring, TFE carbon fiber, Grafoil and more.
Gaskets	Spiral wound metal, with Grafoil or TFE filler.
Leakage Class	ANSI / FCI 70-2 Class IV , V or VI and MSS-SP-61
Special Testing Requirements (Optional upon request)	FE Prototype test as per ISO 15848-1, Class A, B, C, FE Production test as per ISO 15848-2, Class A, B, C, CV Test, Helium leak test, High pressure test, Low temperature test, Cryogenic test, Vacuum test , Dynamic response testing (DRT).
Marking	As per KOSO Standard practices / MSS-SP-25.
Options	Forging Body/Bonnet, Steam jacketing, Silencer, Expanders/Diffuser and baffles.

Body & Trim Sectional View

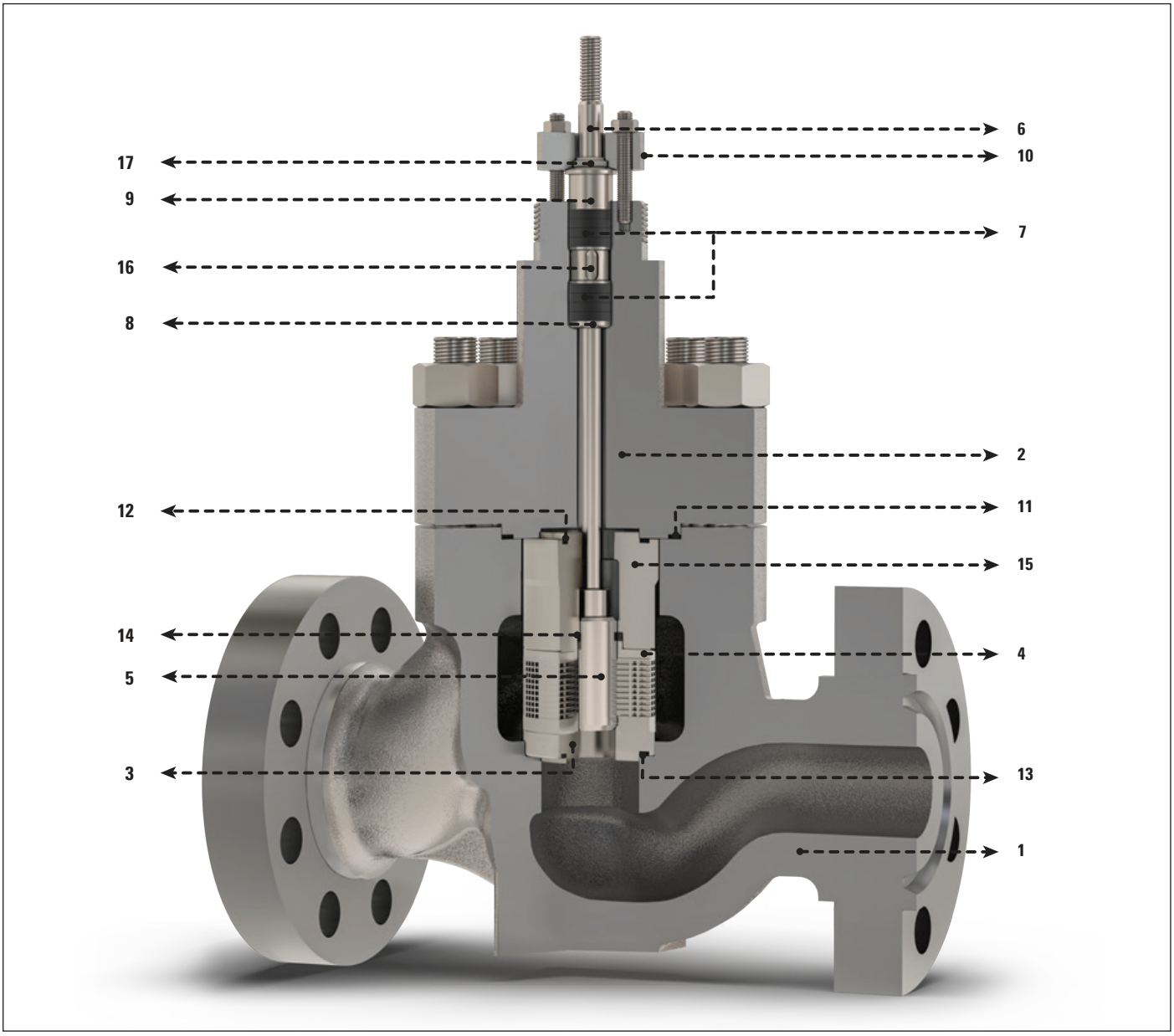


Figure 1: 510D - Globe Valve Body Trim Sectional View

SR.NO.	LABEL
1	BODY
2	BONNET
3	SEAT RING
4	DISK STACK
5	PLUG
6	STEM
7	GLAND PACKING
8	PACKING SEAT
9	GLAND RING

SR.NO.	LABEL
10	GLAND FLANGE
11	BODY - BONNET GASKET
12	PRESSURE BALANCE GASKET
13	SEAT GASKET
14	BALANCE SEAL
15	BALANCE CYLINDER
16	LANTERN RING
17	WIPER

Table 1 : Cv Value - 510D Globe Valve - Pressure Class 150#, 300#, 600#

Disk Stack Material	Valve size in (mm)	Plug size in	Stroke mm	Minimum Cv	Cv- Over and Under the plug flow Rated Cv				
					No. of Stages / Turns				
					0	2	4	6	8
410SS / Alloy 718	1 (25)	5/8	20	0.22	6	5	4.2	3.5	2.6
			25	0.22	16	5.7	5	4.4	3.4
	1 ½ (40)	1	20	0.48	17	11.8	9.2	7.4	5.2
			25	0.48	17	14	11.4	9.6	6.8
	2 (50)	1 ½	25	0.86	41.6	19.5	16.2	12.9	9.8
			30	0.86	45	23.2	19.9	16.2	12.8
	3 (80)	2	30	1.3	70	49	40.5	33	23.9
			40	1.3	70	60.4	52.4	44.5	33.5
	4 (100)	3	40	2.2	139	85	69	58	43
			50	2.2	153	104	86.2	74.9	57
	6 (150)	4	50	3.3	258	145	115	97	77
			60	3.3	258	170	140	120	98
	8 (200)	6	60	6.1	471	231	185	147	113
			80	6.1	471	300	248	204	161
	10 (250)	8	90	10.2	779	429	341	287	225
	12 (300)	10	100	12.2	1100	502	374	297	243
	14 (350)	12	130	15.4	1640	842	682	543	447
	16 (400)	14	150	18.5	2010	1010	805	610	510
	18 (450)	16	150	20.9	2340	1170	940	710	590
316 SS	1 (25)	5/8	20	0.22	5.8	4.7	3.8	3.2	2.4
			25	0.22	5.8	5.6	4.8	4.2	3.3
	1 ½ (40)	1	20	0.48	16	10.8	8.3	6.7	4.6
			25	0.48	16	13.4	10.8	9.1	6.5
	2 (50)	1 ½	25	0.86	40.2	18.3	15.2	12.2	9.2
			30	0.86	43.8	21.7	18.5	15.2	11.7
	3 (80)	2	30	1.3	70	49	40.5	33	23.9
			40	1.3	70	60.2	52.2	44.3	33.2
	(4 100)	3	40	2.2	138	85	68	58	43
			50	2.2	152	102	84.7	73.5	55.9
	(6 150)	4	50	3.3	256	143	114	94	75
			60	3.3	256	167	136	117	95
	(8 200)	6	60	6.1	464	224	180	142	109
			80	6.1	464	297	247	203	160
	10 (250)	8	90	10.2	761	410	326	273	214
	12 (300)	10	100	12.2	1090	492	367	290	238
	14 (350)	12	130	15.4	1610	815	659	525	432
	16 (400)	14	150	18.5	1970	975	778	590	492
	18 (450)	16	150	20.9	2290	1130	908	685	570

Note: The given Cv are for standard valve and trim combinations. KOSO has done extensive developments and tests for extended Cv ranges. Please contact us for custom Cv ranges.

Table 2 : Cv Value - 510D Globe Valve - Pressure Class 900#,1500# (Under Plug Flow)

Valve Size	Plug Size	Minimum	Disk Stack Material : 410 SS and Alloy 718 Rated Cv																			
			No of Stages / Turns																			
in (mm)	in	Cv	8				12				16				20				24			
1 (25)	Stroke		12	20																		
	5/8	0.1		3.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	1/2	0.04	1.5	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1 - 1/2 (40)	Stroke		20	30	40		20	30	40													
	1	0.28	5.7	8.4	11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	5/8	0.1	-	-	-	-	2.9	4	4.9	-	-	-	-	-	-	-	-	-	-	-	-	-
2 (50)	Stroke		25	30	40		25	30	40		25	30	40									
	1 - 1/4	0.36	9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	1	0.28	-	-	-	-	5.8	7	9.4	-	-	-	-	-	-	-	-	-	-	-	-	-
	5/8	0.1	-	-	-	-	-	-	-	-	3.9	4.5	-	-	-	-	-	-	-	-	-	-
3 (80)	Stroke		30	40	50		30	40	50		30	40	50		30	40	50					
	2	0.94	17.7	-	30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	1 - 1/2	0.64	-	-	-	-	12	-	20	-	8.7	-	15.1	-	-	-	-	-	-	-	-	-
	1	0.28	-	-	-	-	-	-	-	-	-	-	-	-	6.1	8.3	9.9	-	-	-	-	-
4 (100)	Stroke		40	50	60	70	40	50	60	70	40	50	60	70	40	50	60	70	40	50	60	70
	2 - 1/2	1.36	31	38	45	52	22	28	33	38	-	-	-	-	-	-	-	-	-	-	-	-
	2	0.94	-	-	-	-	-	-	-	-	15.6	19.3	23	26	-	-	-	-	-	-	-	-
	1 - 1/4	0.36	-	-	-	-	-	-	-	-	-	-	-	-	11.6	14.1	16.4	18.5	7.9	9.7	11.5	13.2
6 (150)	Stroke		50	60	70	90	50	60	70	90	50	60	70	90	50	60	70	90	50	60	70	90
	4	3.17	92	109	124	157	67	80	92	120	47	56	65	86	-	-	-	-	-	-	-	-
	3	2.01	-	-	-	-	-	-	-	-	-	-	-	-	36	42	49	64	-	-	-	-
	2 - 1/2	1.36	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	23	27	31	41
8 (200)	Stroke		60	80	100	120	60	80	100	120	60	80	100	120	60	80	100	120	60	80	100	120
	5	4.5	149	192	236	268	109	143	180	209	75	99	127	149	58	77	99	117	40	53	68	81
	4	3.17	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	3	2.01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10 (250)	Stroke		80	100	120	140	80	100	120	140	80	100	120	140	80	100	120	140	80	100	120	140
	7	6.67	221	279	325	368	156	199	234	268	109	140	166	192	86	111	132	153	-	-	-	-
	5	4.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	57	73	87	100
	4	3.17	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12 (300)	Stroke		90	150	200	220	90	150	200	220	90	150	200	220	90	150	200	220	90	150	200	220
	8	7.59	295	455	571	609	221	350	452	487	151	245	323	351	120	194	258	282	81	132	177	194
	7	6.67	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	6	5.93	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Note: The given Cv are for standard valve and trim combinations. KOSO has done extensive developments and tests for extended Cv ranges. Please contact us for custom Cv ranges.

Table 3 :Cv Value - 510D Globe Valve - Pressure Class 900#,1500# (Over Plug Flow)

Valve Size	Plug Size	Minimum	Disk Stack Material : 410 SS and Alloy 718 Rated Cv																			
			No of Stages / Turns																			
in (mm)	in	Cv	8				12				16				20				24			
1 (25)	Stroke		12	20																		
	5/8	0.1	-	2.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	1/2	0.04	1.3	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1 - 1/2 (40)	Stroke		20	30	40		20	30	40													
	1	0.28	4.3	6.5	8.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	5/8	0.1	-	-	-	-	2.2	3.2	4.1	-	-	-	-	-	-	-	-	-	-	-	-	-
2 (50)	Stroke		25	30	40		25	30	40		25	30	40									
	1 - 1/4	0.36	7.3	8.8	12.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	1	0.28	-	-	-	-	4	4.8	6.6	-	-	-	-	-	-	-	-	-	-	-	-	-
	5/8	0.1	-	-	-	-	-	-	-	-	1.9	2.2	3	-	-	-	-	-	-	-	-	-
3 (80)	Stroke		30	40	50		30	40	50		30	40	50		30	40	50					
	2	0.94	13.4	18.7	23	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	1 - 1/2	0.64	-	-	-	-	9	12.7	15.7	-	5.3	7.4	9.2	-	-	-	-	-	-	-	-	-
	1	0.28	-	-	-	-	-	-	-	-	-	-	-	-	2.8	4	4.9	-	-	-	-	
4 (100)	Stroke		40	50	60	70	40	50	60	70	40	50	60	70	40	50	60	70	40	50	60	70
	2 - 1/2	1.36	23	29	34	39	17.2	21	25	30	-	-	-	-	-	-	-	-	-	-	-	-
	2	0.94	-	-	-	-	-	-	-	-	9.9	12.4	14.8	17.2	-	-	-	-	-	-	-	-
	1 - 1/4	0.36	-	-	-	-	-	-	-	-	-	-	-	-	6.4	7.9	9.4	10.9	3.2	4	4.8	5.6
6 (150)	Stroke		50	60	70	90	50	60	70	90	50	60	70	90	50	60	70	90	50	60	70	90
	4	3.17	73	87	100	129	49	59	68	89	32	38	44	58	-	-	-	-	-	-	-	-
	3	2.01	-	-	-	-	-	-	-	-	-	-	-	-	21	25	29	38	-	-	-	-
	2 - 1/2	1.36	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	11.5	13.7	16	21
8 (200)	Stroke		60	80	100	120	60	80	100	120	60	80	100	120	60	80	100	120	60	80	100	120
	5	4.5	120	156	195	225	91	120	151	177	57	75	96	114	40	53	69	82	25	33	42	50
	4	3.17	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	3	2.01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10 (250)	Stroke		80	100	120	140	80	100	120	140	80	100	120	140	80	100	120	140	80	100	120	140
	7	6.67	182	231	271	309	130	167	198	227	84	108	129	149	58	74	89	103	-	-	-	-
	5	4.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	37	47	56	65
	4	3.17	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12 (300)	Stroke		90	150	200	220	90	150	200	220	90	150	200	220	90	150	200	220	90	150	200	220
	8	7.59	260	407	518	555	192	307	400	433	123	199	265	288	86	141	189	206	57	94	126	138
	7	6.67	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	6	5.93	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Note: The given Cv are for standard valve and trim combinations. KOSO has done extensive developments and tests for extended Cv ranges. Please contact us for custom Cv ranges..

Table 4 : Cv Value - 510D Globe Valve - Pressure Class 2500# (Under Plug Flow)

Valve Size	Plug Size	Minimum	Disk Stack Material : 410 SS and Alloy 718 Rated Cv																			
			No of Stages / Turns																			
in (mm)	in	Cv	8				12				16				20				24			
1 (25)	Stroke		20	30	40		20	30	40													
	5/8	0.1	4	5	-	-	2.9	4	4.9	-	-	-	-	-	-	-	-	-	-	-	-	-
2 (50)	Stroke		25	30	40		25	30	40		25	30	40									
	1	0.28	8.6	10	12.9	-	5.8	7	9.4	-	-	-	-	-	-	-	-	-	-	-	-	-
	5/8	0.1	-	-	-	-	-	-	-	-	3.9	4.5	-	-	-	-	-	-	-	-	-	-
3 (80)	Stroke		30	40	50	60	30	40	50	60	30	40	50	60	30	40	50	60				
	1 - 1/2	0.64	13.2	18.2	22	26	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	1	0.28	-	-	-	-	8.5	11.2	13	14.5	6.7	9.1	10.8	12.4	-	-	-	-	-	-	-	-
	5/8	0.1	-	-	-	-	-	-	-	-	-	-	-	-	4.1	5	-	-	-	-	-	-
4 (100)	Stroke		40	50	60	70	40	50	60	70	40	50	60	70	40	50	60	70	40	50	60	70
	2	0.94	28	35	40	45	21	26	31	35	14.8	18.3	22	25	-	-	-	-	-	-	-	-
	1 - 1/2	0.64	-	-	-	-	-	-	-	-	-	-	-	-	11.1	13.8	16.4	18.8	-	-	-	-
	1	0.28	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6.9	8.4	9.7	11
6 (150)	Stroke		50	70	90	110	50	70	90	110	50	70	90	110	50	70	90	110	50	70	90	110
	3	2.01	70	93	114	130	53	72	91	106	-	-	-	-	-	-	-	-	-	-	-	-
	2	0.94	-	-	-	-	-	-	-	-	36	48	58	65	27	37	46	53	-	-	-	-
	1 - 1/4	0.36	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	18	23	27	29
8 (200)	Stroke		60	80	100	110	60	80	100	110	60	80	100	110	60	80	100	110	60	80	100	110
	4	3.17	109	139	170	181	80	104	130	141	56	74	94	102	-	-	-	-	-	-	-	-
	3	2.01	-	-	-	-	-	-	-	-	-	-	-	-	42	55	70	76	-	-	-	-
	2	0.94	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	26	34	42	46
10 (250)	Stroke		80	100	150	170	80	100	150	170	80	100	150	170	80	100	150	170	80	100	150	170
	5	4.5	200	245	319	341	143	180	248	270	103	132	187	208	81	104	151	168	53	68	100	112
12 (300)	Stroke		90	100	150	200	90	100	150	200	90	100	150	200	90	100	150	200	90	100	150	200
	6	5.93	262	285	380	452	196	214	299	371	135	149	214	276	109	120	175	229	71	79	116	154

Note: The given Cv are for standard valve and trim combinations. KOSO has done extensive developments and tests for extended Cv ranges. Please contact us for custom Cv ranges..

Table 5 : Cv Value - 510D Globe Valve - Pressure Class 2500# (Over Plug Flow)

Valve Size	Plug Size	Minimum	Disk Stack Material : 410 SS and Alloy 718 Rated Cv																			
			No of Stages / Turns																			
in (mm)	in	Cv	8				12				16				20				24			
1 (25)	Stroke		20	30	40		20	30	40													
	5/8	0.1	3.4	4.5	-	-	2.2	3.2	4.1	-	-	-	-	-	-	-	-	-	-	-	-	-
2 (50)	Stroke		25	30	40		25	30	40		25	30	40									
	1	0.28	7	8.4	11	-	4	4.8	6.6	-	-	-	-	-	-	-	-	-	-	-	-	-
	5/8	0.1	-	-	-	-	-	-	-	-	1.9	2.2	3	-	-	-	-	-	-	-	-	-
3 (80)	Stroke		30	40	50	60	30	40	50	60	30	40	50	60	30	40	50	60				
	1 - 1/2	0.64	11.1	15.4	19	22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	1	0.28	-	-	-	-	6.4	8.7	10.5	12	3.5	4.9	6	7.1	-	-	-	-	-	-	-	-
	5/8	0.1	-	-	-	-	-	-	-	-	-	-	-	-	1.7	2.3	2.8	3.2	-	-	-	-
4 (100)	Stroke		40	50	60	70	40	50	60	70	40	50	60	70	40	50	60	70	40	50	60	70
	2	0.94	23	28	33	37	15.4	19.1	23	26	9.1	11.3	13.6	15.8	-	-	-	-	-	-	-	-
	1 - 1/2	0.64	-	-	-	-	-	-	-	-	-	-	-	-	6	7.5	9	10.5	-	-	-	-
	1	0.28	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2.4	3	3.6	4.1
6 (150)	Stroke		50	70	90	110	50	70	90	110	50	70	90	110	50	70	90	110	50	70	90	110
	3	2.01	59	79	100	114	40	56	72	85	-	-	-	-	-	-	-	-	-	-	-	-
	2	0.94	-	-	-	-	-	-	-	-	23	31	40	47	12.8	17.7	23	28	-	-	-	-
	1 - 1/4	0.36	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6.3	8.7	11.4	13.5
8 (200)	Stroke		60	80	100	110	60	80	100	110	60	80	100	110	60	80	100	110	60	80	100	110
	4	3.17	88	114	141	152	59	77	98	106	38	50	64	70	-	-	-	-	-	-	-	-
	3	2.01	-	-	-	-	-	-	-	-	-	-	-	-	25	33	42	46	-	-	-	-
	2	0.94	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12.2	16.1	21	23
10 (250)	Stroke		80	100	150	170	80	100	150	170	80	100	150	170	80	100	150	170	80	100	150	170
	5	4.5	165	205	277	300	120	151	213	234	79	102	147	164	57	74	108	121	33	42	62	70
12 (300)	Stroke		90	100	150	200	90	100	150	200	90	100	150	200	90	100	150	200	90	100	150	200
	6	5.93	217	237	326	399	169	185	262	331	109	121	175	230	76	85	124	165	48	53	78	104

Note: The given Cv are for standard valve and trim combinations. KOSO has done extensive developments and tests for extended Cv ranges. Please contact us for custom Cv ranges.

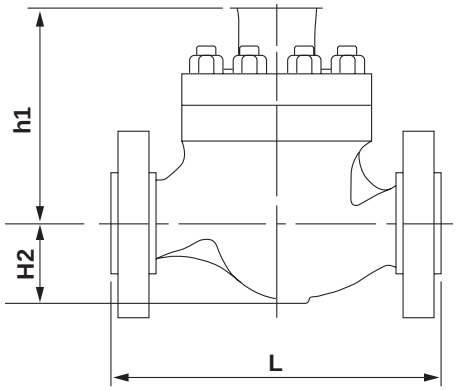
Table 6 : Dimension details - 510D Globe Valve - Pressure Class 150#, 300#, 600#

Body Size	Face to Face: L							H2	Standard Bonnet	Fin Extension
in	ASME 150# RF	ASME 300# RF	ASME 600# RF	ASME 300# BW/SW	ASME 300# RTJ	ASME 600# BW	ASME 600# RTJ		h1	h1
1	184	197	210	210	210	210	210	47	157	257
1 1/2	222	235	251	251	248	251	251	60	175	325
2	254	267	286	286	283	286	289	70	196	346
3	298	317	337	317	333	337	340	98	201	351
4	352	368	394	368	384	394	397	113	275	425
6	451	473	508	473	489	508	511	144	305	455
8	543	568	610	568	584	610	613	185	365	515
10	673	708	752	708	724	752	756	225	420	570
12	737	775	819	775	791	819	822	260	480	630
14	889	927	972	927	943	972	975	320	625	775
16	1016	1057	1108	1057	1073	1108	1111	370	720	870

Table 7: Dimension details - 510D Globe Valve - Pressure Class 900#, 1500#, 2500#

Body Size	Face to Face: L						H2			Standard Bonnet	Fin Extension
in	900# BW/RF	900# RTJ	1500# BW/RF	1500# RTJ	2500# BW/RF	2500# RTJ	ANSI 900#	ANSI 1500#	ANSI 2500#	h1	h1
1 1/2	333	333	333	333	447	450	72	72	76	260	405
2	375	378	375	378	437	440	93	93	90	280	430
3	440	443	460	463	498	505	125	125	130	350	500
4	510	513	530	533	566	575	132	132	140	420	570
6	715	718	770	776	820	833	199	199	250	450	600
8	854	857	911	920	1279	1295	226	226	340	560	710
10	1251	1254	1327	1336	1778	1800	330	330	456	615	765
12	1311	1314	1400	1416	1422	TBA	450	450	485	840	990
14	1828	TBA	1828	TBA	2137	TBA	680	680	540	610	760

All dimensions are in mm



Note: Above dimensions are approximate and subjected to change during the detailed engineering.

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