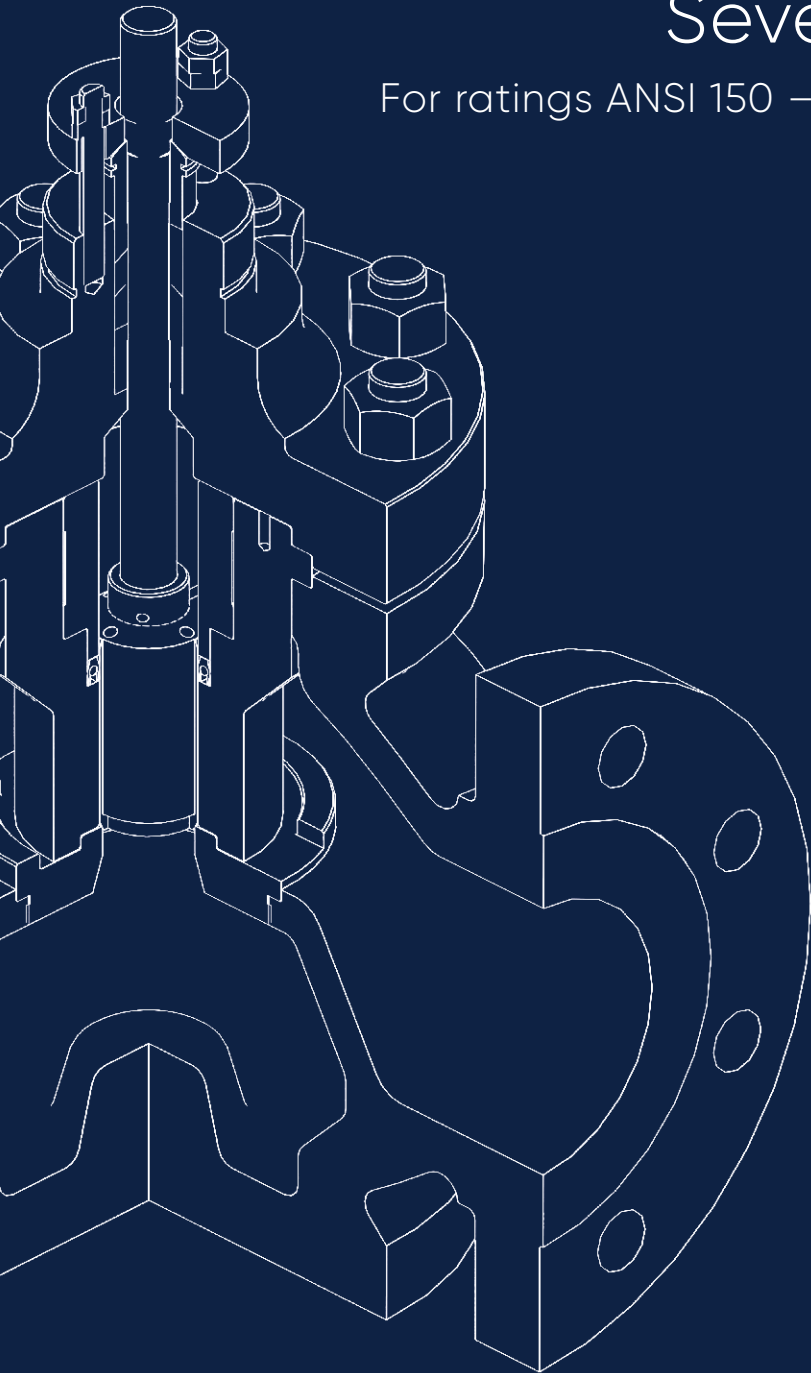




# 1000 Series Severe Service Valves

For ratings ANSI 150 – 4500 DIN/BS4504 PN 10 – 420

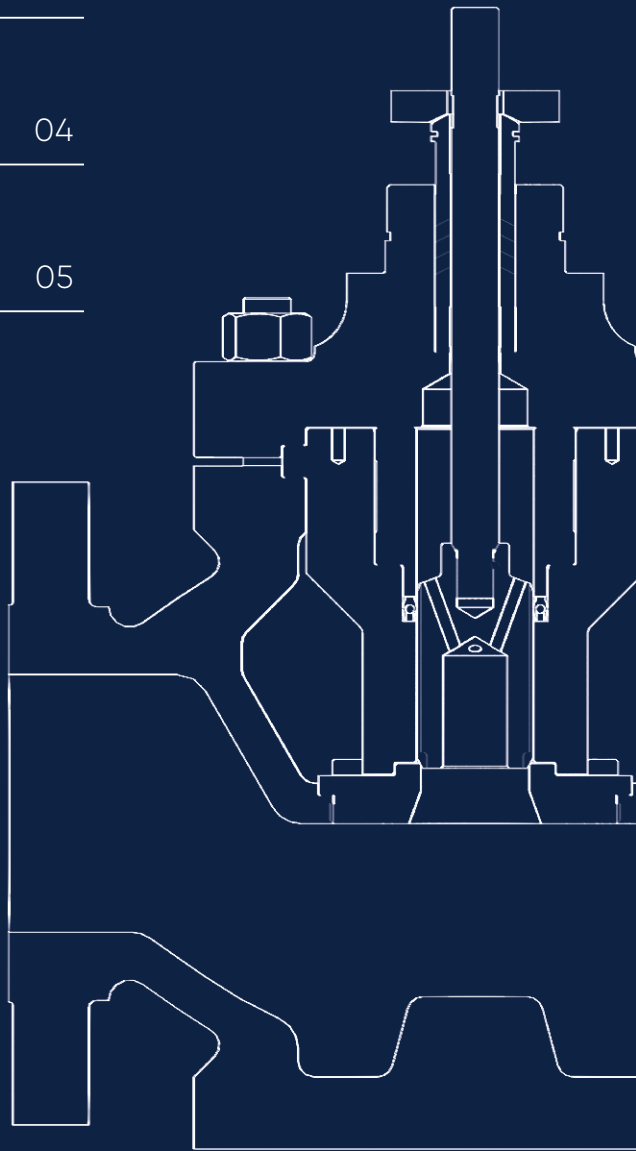


It all flows from expertise.



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# 1000

## SERIES

The Severn 1000 Series Severe Service Control Valve benefits from more than five decades of experience in providing cost effective and easily maintained valves for applications found through the process, power, oil and gas industries. The simple design provides rugged reliability and is based upon a cast top entry style body in a range of material options. The 1000 Series Valve is available with a screwed seat though to advanced multi stage trim options.



# Engineering data

## Design features

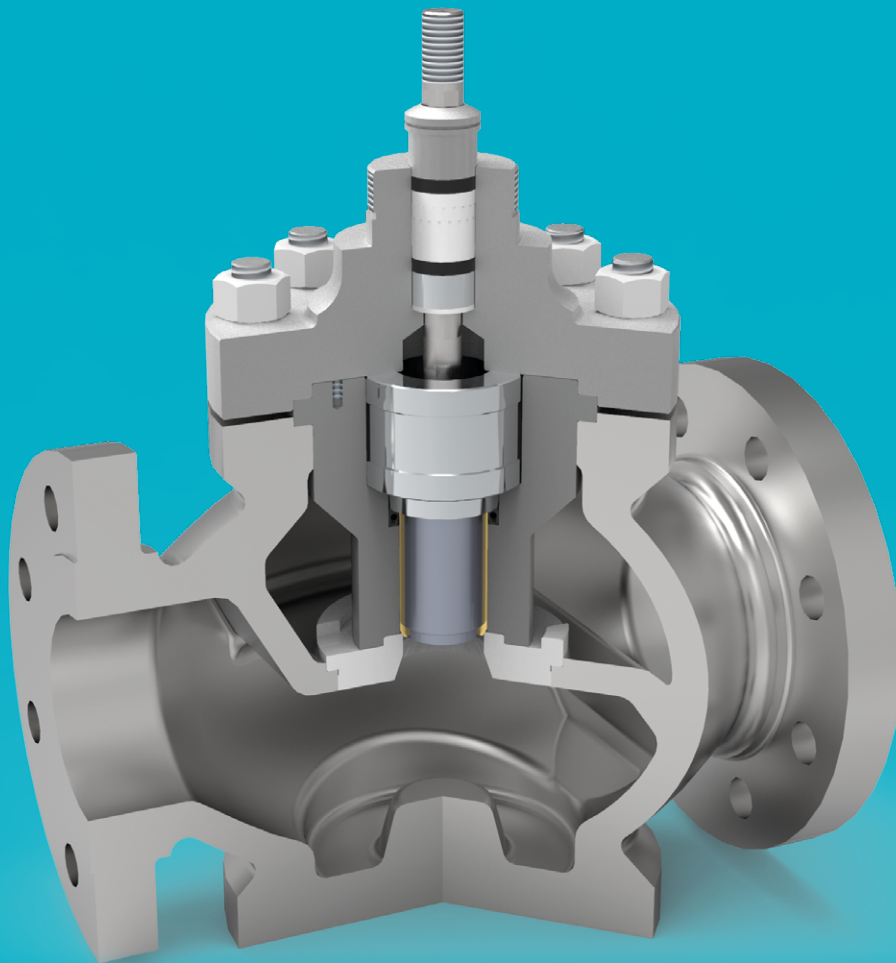
- ✔ Smooth profile cast globe body construction
- ✔ Wide range of trim options available
- ✔ Robust parts for trouble free service and low cost of ownership
- ✔ Valve body proportioned to stand high pipe stresses without distortion
- ✔ Inherently characterised trims available in linear, equal percentage or semi-throttle
- ✔ Both balanced and unbalanced trim designs available with soft seat insert option

## Benefits

- ✔ Top-entry servicing with immediate access to plug and seat
- ✔ Reduced inspection and maintenance costs
- ✔ Trims compact and easy to install
- ✔ Excellent flow capacity and control rangeability
- ✔ Reduces potential erosion and noise problems
- ✔ Reliable leakage performance, bubble tight shut off available
- ✔ High interchangeability between sizes and other products
- ✔ Low actuating forces required with balanced trim styles

## Quality engineered

- ✔ Rigorously proven on-site performance
- ✔ Manufactured to ISO 9001 requirements



# Engineering data

## General

The Series 1000 range of screwed-in seat cast integral, spring opposed diaphragm actuated valves, was developed to provide a low cost, reliable and easily maintained control valve capable of working in rigorous environments. Single stage balanced and unbalanced trims provide entry level trim options before progressing to the Severn Series 5000 range of multi-cage and multi-labyrinth low noise trims.

### End connection sizes/types

1/2in (12mm) – 36in (900mm). Integral or Separable Flanges, Screwed, Butt or Socket weld ends. For other styles please contact us.

### Design standards

ANSI B16.34  
ANSI/ISA S75.03 1984

### Valve body ratings

ASME 150 - 4500  
EN 1092 PN 10 to PN 420

### Body configurations

Cast globe.

### Body face to face dimensions

ANSI/ISA 75.08 up to 10in and class 600.  
12in and above as per Severn standard.  
custom F-F available on request.

### Bonnet styles

Standard and Normalising.

### Standard valve packing and fugitive emissions

PTFE Chevrons  
PTFE Braided Rope  
Die Formed Graphite  
Graphite Braided Rope  
ISO 15848-1 & ISO 15848-2 compliant

### Trim options

Single and multi stage pressure reducing trims.  
High capacity screwed in seat / Contoured trims.  
Single and multi cage pressure reducing trims.  
Multi labyrinth velocity controlling trims. A wide range of application specific trims are available on request.

### Trim style

Microspline, Contoured, Contoured Soft Faced, Ported and Cage Balanced and Non Balanced.

### Trim materials

A wide range of standard materials are available for both the valve pressure containing parts and trim, including carbon and stainless steel, duplex/super duplex and high nickel alloys. Stellite, and other hard facings/coatings are available. We also provide a range of tungsten carbide and ceramic material options for severe service trims. For further details on materials please contact us.

### Inherent trim flow/lift characteristics:

Equal %, Linear, Quick-Opening, Modified Equal % (Microspline only).

### Trim seat leakage class

FCI 70-2 - Up to Class VI ISO 60534-4  
– Up to to Class VI.

Class III (Metal to Metal Contoured and Metal to Metal Balanced cage with Metal Rings).

Class IV (Metal to Metal Contoured and Metal to Metal Balanced Cage with Lipseal).

Class V (Non Balanced only with Special lapped Contoured or with PTFE Seat Faces).

Class VI (Non Balanced with PTFE Seat Faces).

### Body/bonnet gasket sealing

Teflon  
Spiral Wound Graphite /304 SS  
Graphite /316stst Spiral Wound  
Graphite /inconel 625 Spiral Wound

### Actuation

We offer a wide range of actuators including the P-Series Linear spring opposed pneumatic cylinders and W-Series diaphragm-spring pneumatic actuators. In addition electric, hydraulic, spring and diaphragm electro hydraulic actuators and manually operated versions are available.

### Instrumentation options

Pneumatic, I/P and Digital Smart Positioners. Air Filter Regulators, Volume Boosters, Position Transmitters, Lock-up Solenoid Valves.

### Sizing/velocity/noise calculations

Full procedures in accordance with International Standards are detailed in the Severn Technical Manual.

# Flow Coefficients Cv

**Table 1 Cv Values for Microspline Trim – Valve Sizes 1" (25mm) Valve Stroke 1 1/8" (28mm)**

Trim No	Modified	00	0	1	2	3	4	5	6
Trim Cv	Equal %	3	1.5	0.75	0.45	0.3	0.2	0.13	0.075
Trim No	7	8	9	10	11	12	13	14	15
Trim Cv	0.045	0.03	0.02	0.013	0.0075	0.0045	0.003	0.002	0.0013

**Table 2 Cv Values for Standard Trim Sizes 1" (25mm) to 10" (250mm)**

Valve Size in (mm)	Valve Stroke in (mm)	Trim Size in	Contour Profile Linear/E%	Contour Profile Q/Open	Ported Cage PC1 Linear /E%	Single Cage 1CC Equal%	Single Cage 1CC Linear
1 (25)	1 1/8 (28)	1/16	0.4	0.4	-	-	-
		1/8	0.63	0.63	-	-	-
		3/16	1.2	1.2	-	-	-
		1/4	2	2	-	2	2
		3/8	3.2	3.2	-	3.2	3.2
		1/2	5	5	-	5	5
		3/4	8	8	-	8	8
		1	13.5*	13.5*	-	-	-
1 1/2 (40)	1 1/8 (28)	1.1/2	28	37	28	-	-
		1.1/4	21	23	21	23	23
		1	13.5	13.5	13.5	15	15
		3/4	8	8	8	8	8
2 (50)	1 1/8 (28)	2	50	55	50	-	-
		1 1/2	28	37	28	35	35
		1 1/4	21	23	21	23	23
		1	13.5	13.5	13.5	15	15
3 (80)	1 1/2 (38)	3	120	130	105	-	-
		2 1/2	85	92	85	92	92
		2	50	55	50	55	55
		1 1/2	28	37	28	35	35
4 (100)	1 1/2 (38)	4	185	215	170	170	170
		3 1/2	-	-	-	145	145
		3	120	130	105	130	130
		2 1/2	85	92	85	92	92
		2	50	55	50	55	55
6 (150)	2 1/4 (57)	6	440	470	375	380	380
		5	325	335	300	320	320
		4	185	215	185	235	235
		3 1/2	-	-	-	170	170
		3	120	130	120	130	130
8 (220)	2 1/4 (57)	8	620	740	550	-	-
		6	440	470	420	460	460
		5	325	335	300	360	360
		4	185	215	185	235	235
10 (250)	3 1/4 (89)	10	930	1140	930	-	-
		9	-	-	-	790	890
		8	620	740	620	680	740
		6	440	470	420	480	480

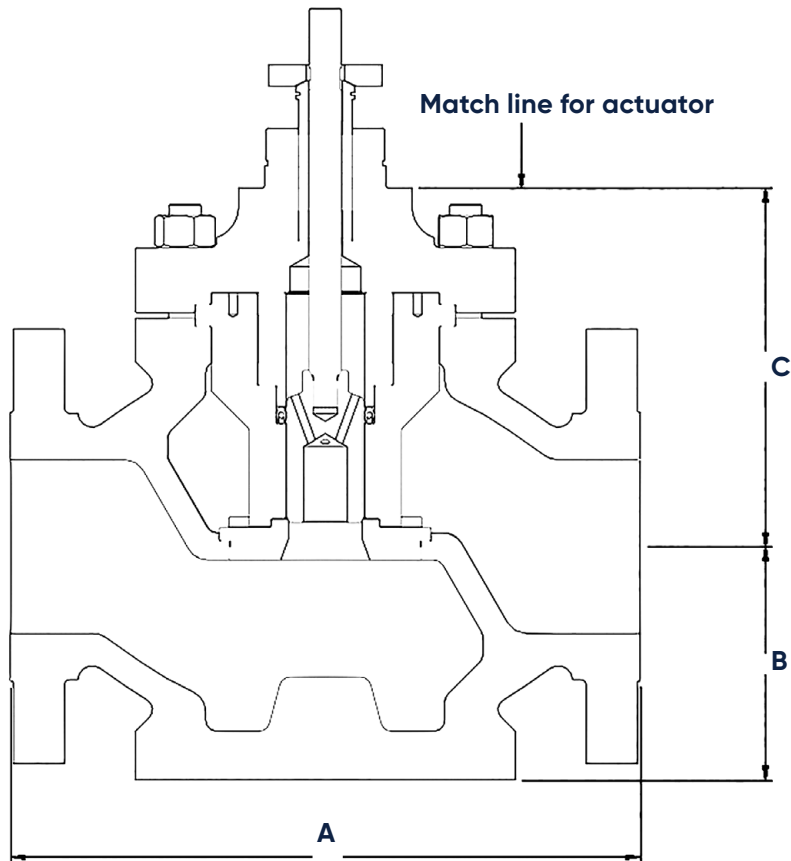
Note\* 1" (25mm) Valve trim with soft seat faced plug max cv is 11.

# Dimensions

**Table 3. Series 1000 Globe Valve Dimensions – ins (mm)**

A	Valve face to face B			C	Bonnet heights			D	E	F	Nett weight *lbs (kg)		
	Valve Size in (mm)	A	B		C	Stem up	S				E	B	Valve body
1 (25)	7 1/4 (184)	7 3/4 (197)	8 1/4 (210)	4 5/8 (118)	5 1/2 (140)	8 3/4 (222)	12 3/4 (324)	2 5/8 (67)	1 1/8 (28)	28 (13)	32 (15)	45 (20)	
1 1/2 (40)	8 3/4 (222)	9 1/4 (235)	9 7/8 (251)	4 5/8 (118)	6 1/4 (159)	11 1/2 (292)	13 7/8 (353)	3 1/4 (83)	1 1/8 (28)	44 (20)	49 (22)	64 (29)	
2 (50)	10 (254)	10 1/2 (267)	11 1/4 (268)	4 5/8 (118)	6 5/8 (168)	11 3/4 (298)	14 1/4 (362)	3 3/8 (86)	1 1/8 (28)	66 (30)	72 (33)	91 (41)	
3 (80)	11 3/4 (298)	12 1/2 (318)	13 1/4 (337)	5 5/8 (143)	8 (203)	12 7/8 (327)	18 3/8 (467)	4 1/4 (108)	1 1/2 (40)	97 (44)	108 (49)	140 (63)	
4 (100)	13 7/8 (352)	14 1/2 (368)	15 1/2 (394)	5 5/8 (143)	8 1/8 (206)	14 (357)	18 3/8 (467)	5 3/8 (137)	1 1/2 (40)	199 (90)	214 (97)	262 (119)	
6 (150)	17 3/4 (451)	18 5/8 (473)	20 (508)	7 3/4 (197)	10 7/8 (276)	15 3/8 (391)	26 5/8 (676)	6 3/4 (172)	2 1/4 (57)	353 (160)	377 (171)	450 (205)	
8 (800)	21 3/8 (543)	22 3/8 (568)	24 (610)	7 3/4 (197)	11 1/2 (292)	17 1/8 (453)	27 (686)	8 (203)	2 1/4 (57)	610 (277)	642 (292)	754 (343)	
10 (250)	26 1/2 (673)	27 7/8 (708)	29 5/8 (752)	9 (229)	15 3/8 (391)	24 7/8 (632)	36 1/4 (921)	9 3/8 (238)	3 1/2 (89)	1032 (469)	1111 (505)	1323 (601)	

Note: Weight includes standard bonnet and full size contoured trim.





**Vinnova Exploration**  
sales@vinnova.asia  
063-271-9119  
www.vinnova.asia



Engineering  
Excellence

**Head Office – Brighouse UK**  
Heywoods Industrial Park,  
Birds Royd Lane,  
Brighouse, HD6 1NA.

T: +44 (0)845 6070 710  
E: sales@severnvalve.com

**Gloucester UK**  
Olympus Park,  
Quedgeley,  
Gloucester, GL2 4NF.

T: +44 (0)845 223 2040  
E: sales@severnvalve.com

**Chennai India**  
F96 & F97, SIPCOT Industrial Park,  
Irrungattukottai, Chennai,  
Tamilnadu, India - 602 117.

T: +91 44 4710 4200  
E: sales@severnvalve.com

[www.severnvalve.com](http://www.severnvalve.com)

Our policy is one of continuous improvement and we reserve the right to modify these specification details without notice.

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