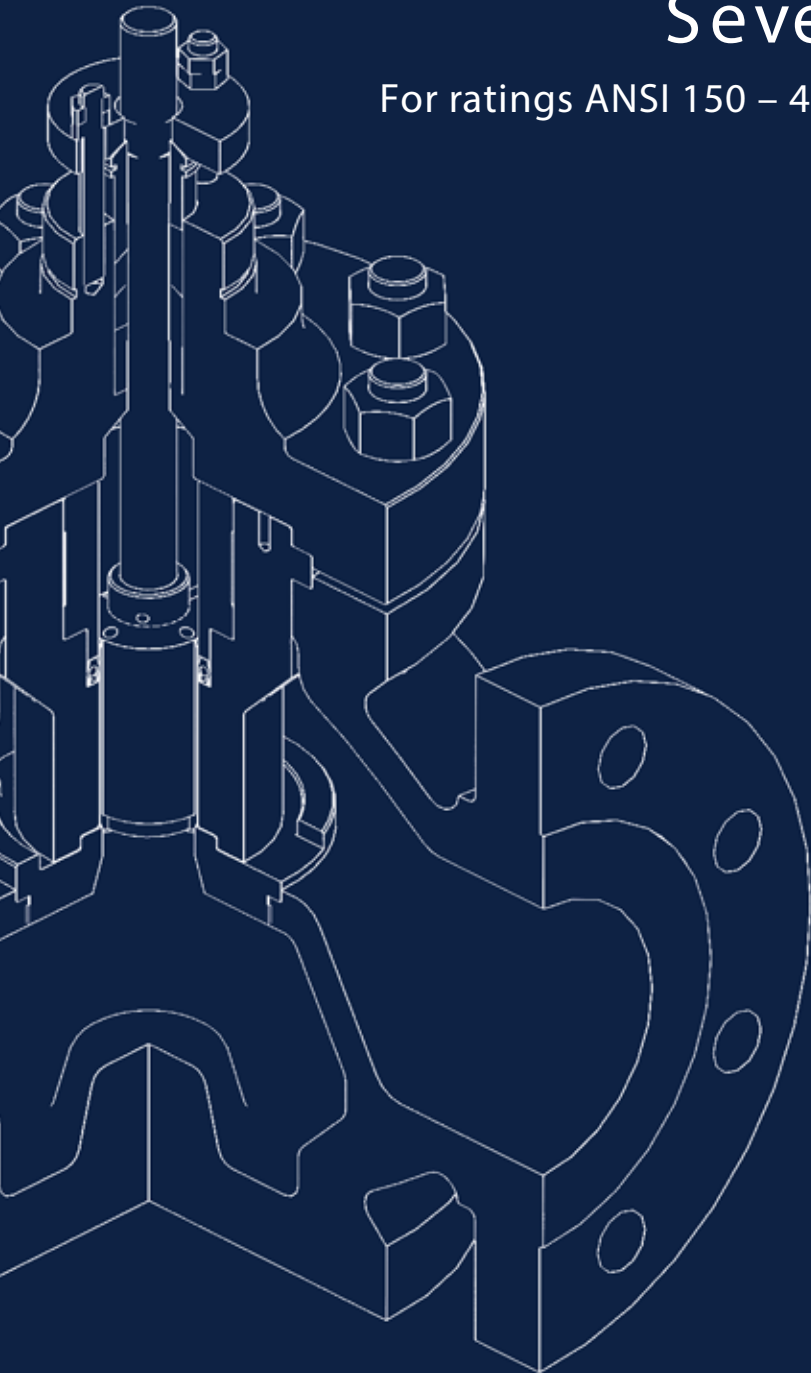




1000 Series Severe Service Valves

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



It all flows from expertise.



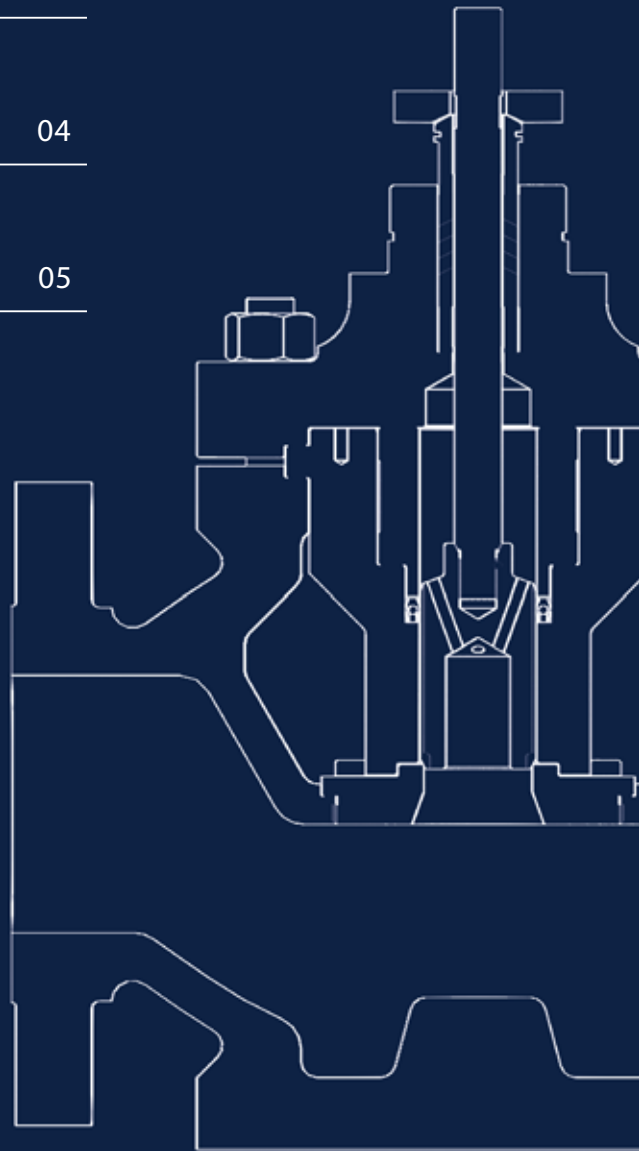
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1000 SERIES

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

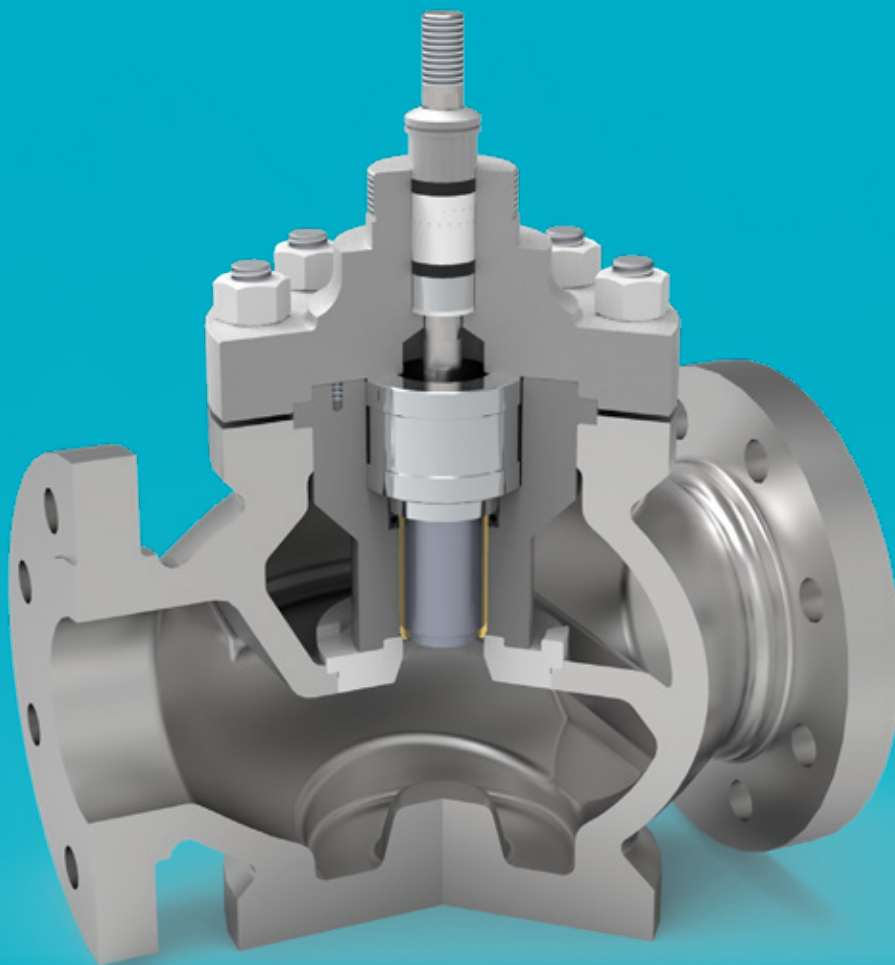
- ✓ Smooth profile cast globe body construction
- ✓ Wide range of trim options available
- ✓ Robust parts for trouble free service and low cost of ownership
- ✓ Valve body proportioned to stand high pipe stresses without distortion
- ✓ Inherently characterised trims available in linear, equal percentage 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

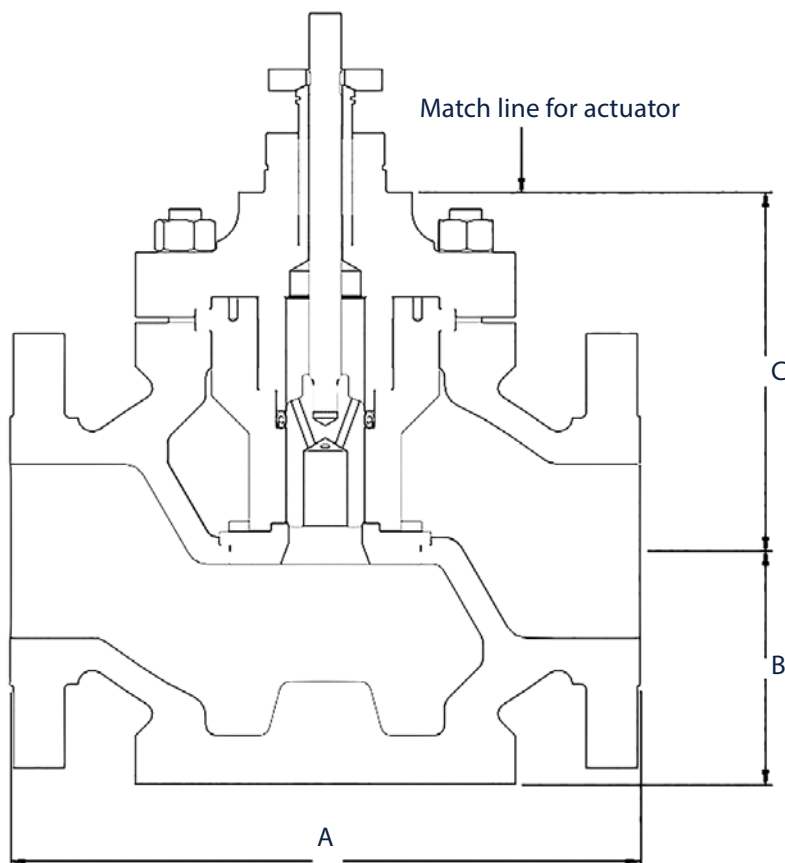
Note* 1" (25mm) Valve trim with soft seat faced plug max cv is 11.

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	Valve Travel	Ansi 150	Ansi 300	Ansi 600
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.





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