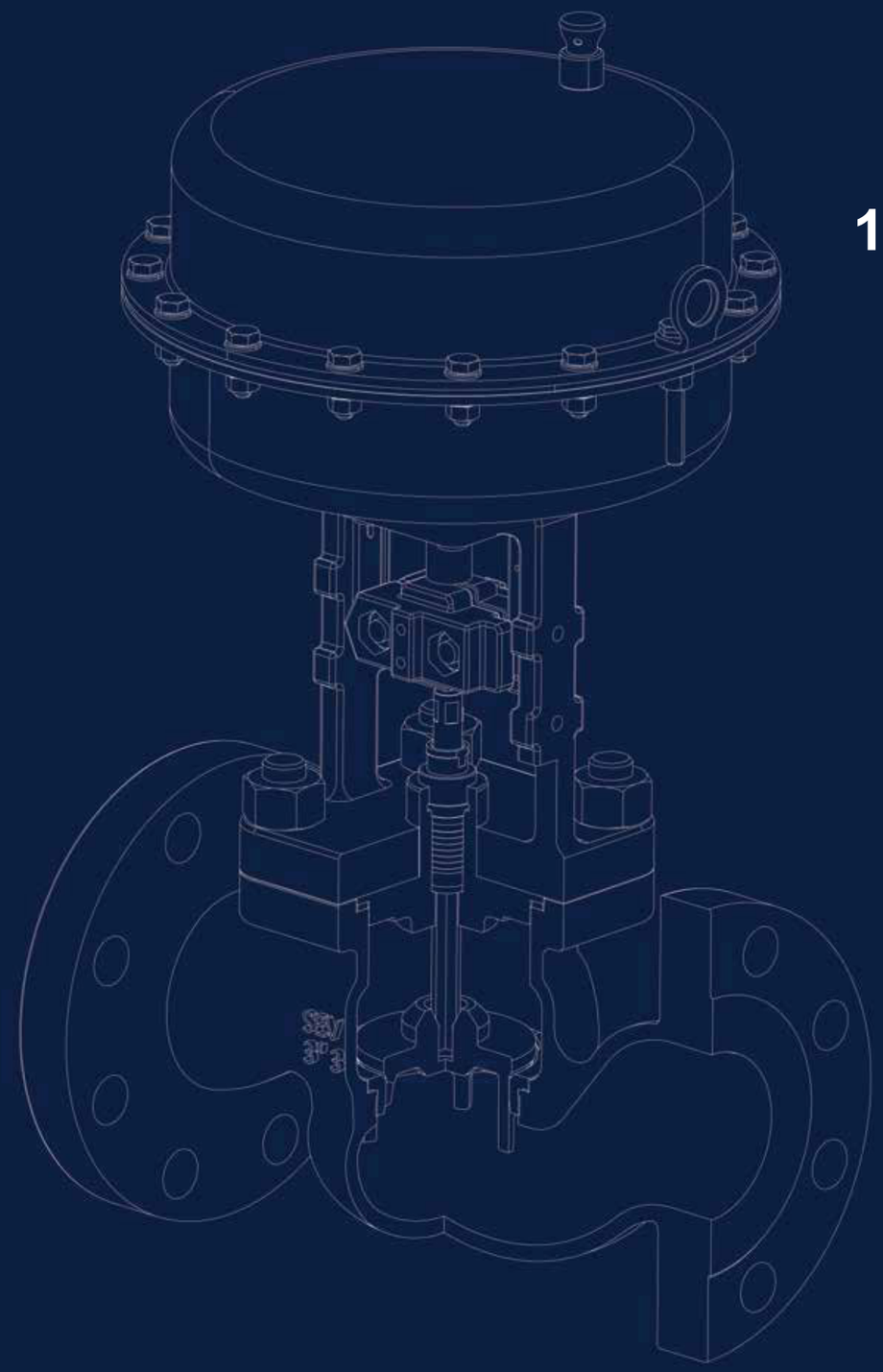

SEVERN

1600 Series Globe Valves

Pressure Class ASME 150-300

65 YEARS
Engineering Excellence

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www.severnvalve.com

V1.0

It all flows from expertise.

65 YEARS
Engineering Excellence

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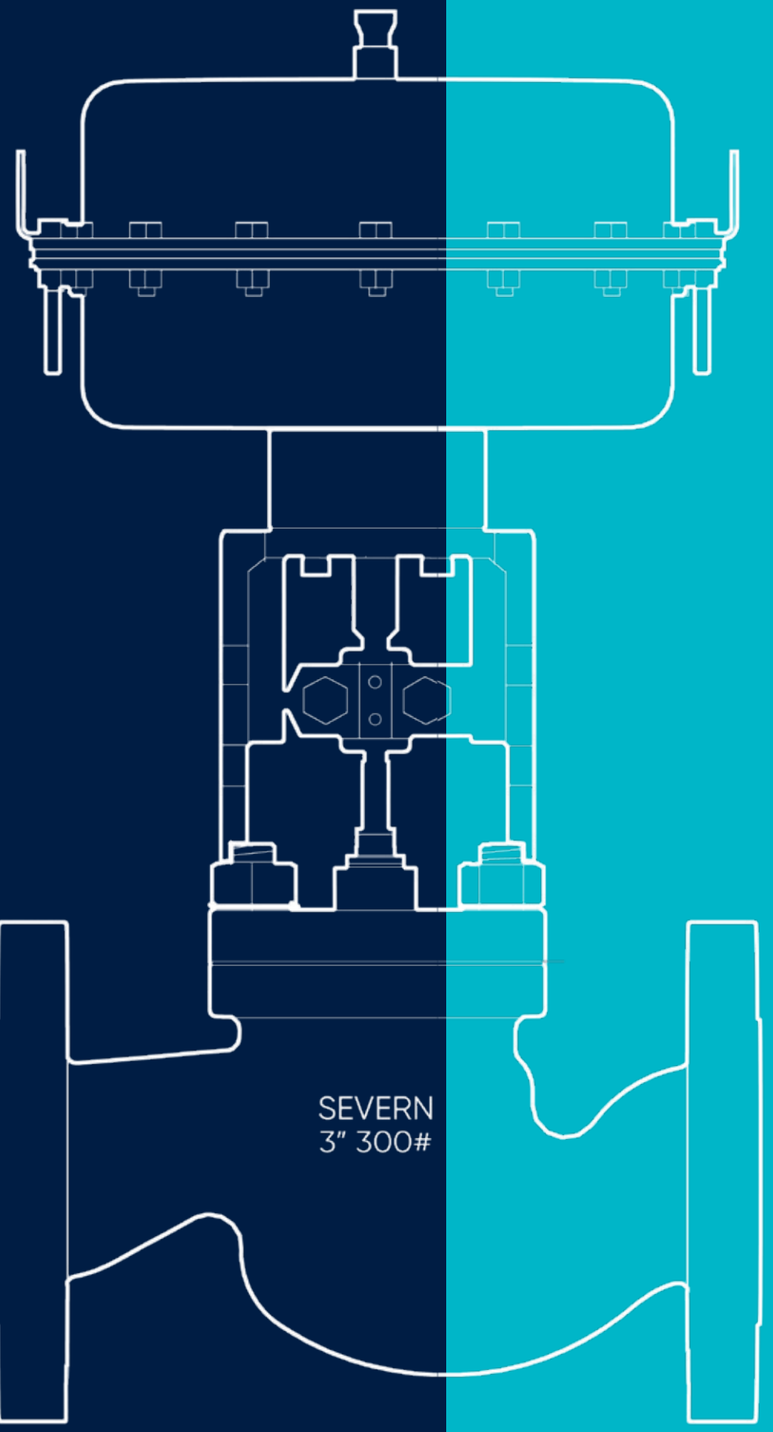


1600 Series

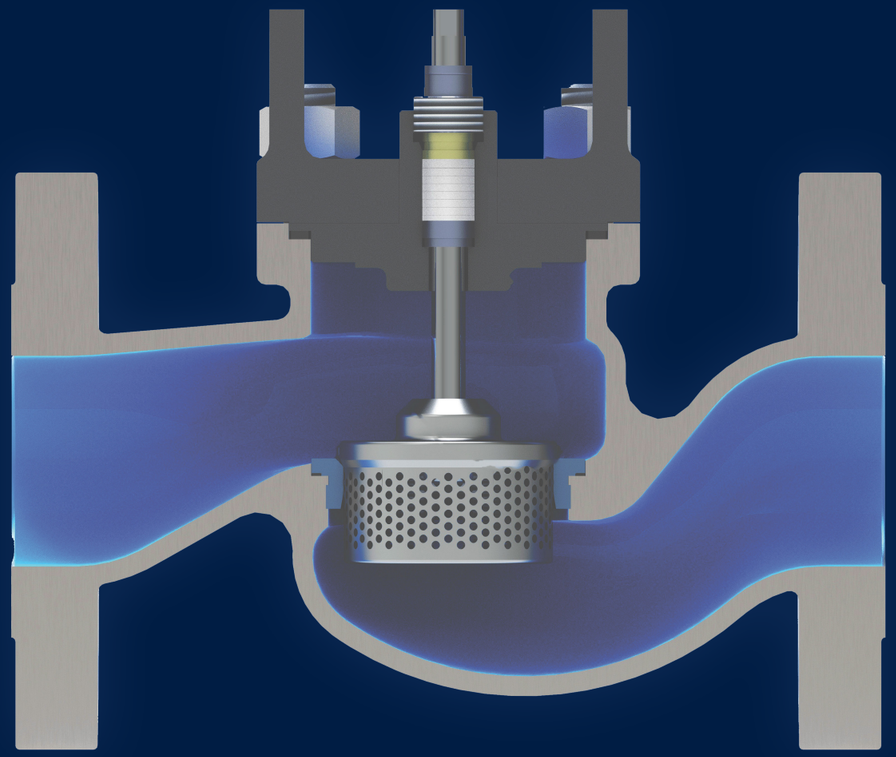
The 1600 Series—built for the demands of chemical industries tough control. Designed for optimal process efficiency in a compact lightweight package.

We achieve capacity and stiffness by design. Delivering a lighter assembly and fast stroking actuator. Precision investment-cast options on major parts enable us to supply high performance products at competitive lead times.

Valve Model Numbering

This series cover valves from size 1 inch to 6 inch and pressure class ASME 150 to 300. Its streamlined design and defined characteristics mean simple selection and easy stocking potential.

Valve Series	Body Style	Pressure Class
16 - Series 1600	1 - Globe	1- ASME 150 2- ASME 300



Engineering Data

Model
1600 Series Globe Valve

Sizes
1 inch - 6 inch

Design Standard
ASME
B16.34

Face to Face
ISA 75.08 / IEC 60534-3-1

Body Style
Globe only

Body Material
Wide ranging options including;
WCB / LCB / CF8M

Pressure Class
ASME 150 - 300

End Connection
Integral flanged (RF/FF), ASME B16.5
End Finish
125-250 AARH & 63-125 AARH

Bonnet Styles
Standard

Gland Packing
PTFE Chevrons
Graphite

Body / Bonnet

Valve Material	Non-Sour Services		Sour Services (NACE MR0175)	
	Stud	Nut	Stud	Nut
CS	B7	2H	B7M	2HM
LT.CS	L7	7L	L7M	7ML
SS/DSS	B8M	8M	B8M	8MA

Gaskets
316L spiral wound gaskets with graphite filler, standard.
316L spiral wound gasket with PTFE filler, optional.

Trim Options
Contoured
Drilled Hole Plug
Ported Cage Plug
Micro Spline

Inherent Trim characteristics
Equal percentage
Linear

Guiding
Stem guides/ cage guided depending on trim set selection

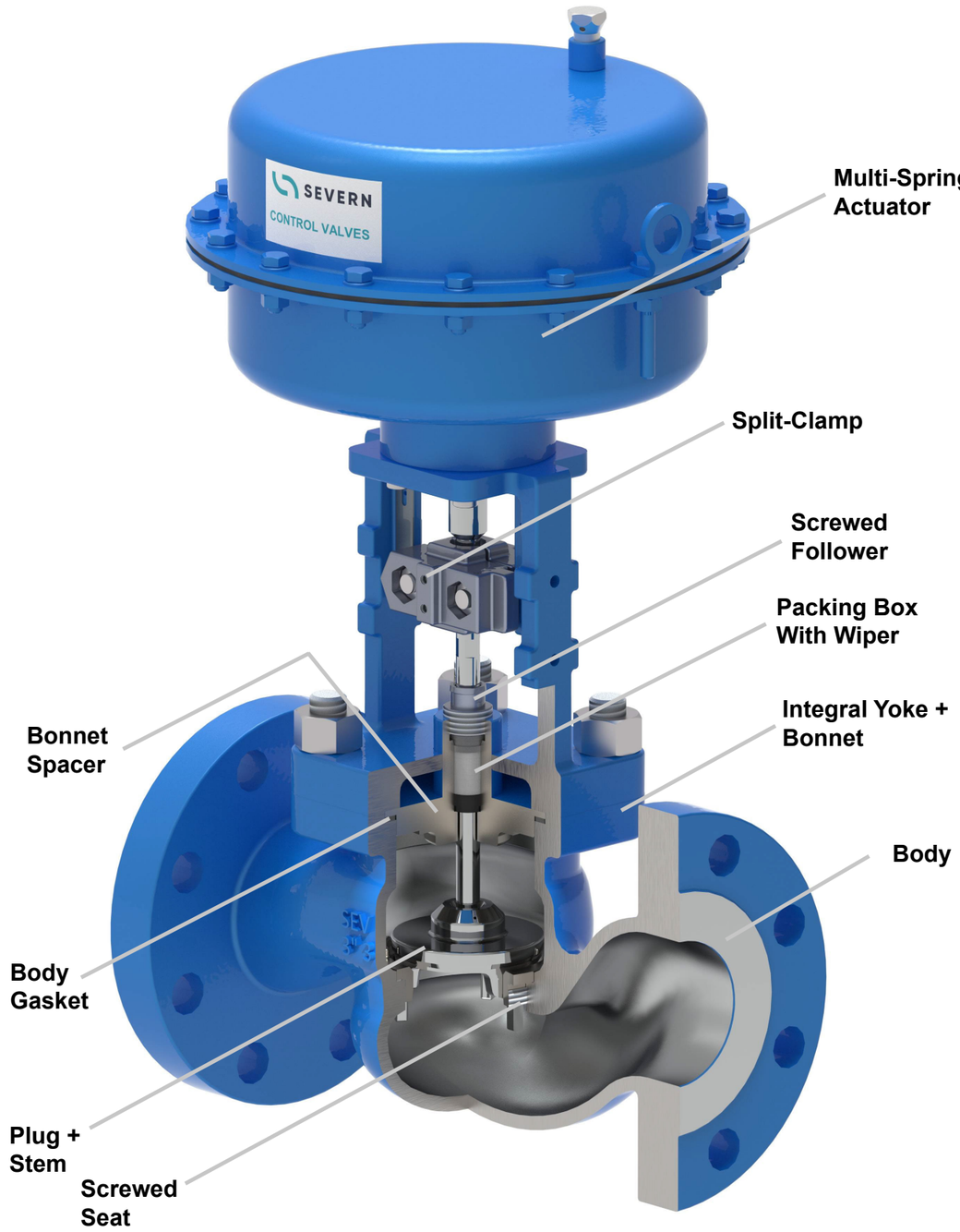
Hard facing
Available on request.

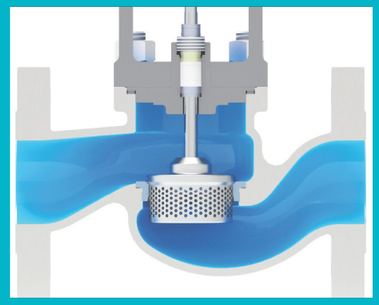
Seat Leakage
ANSI / FCI 70.2 / IEC 60534-4 Class IV is standard
Class V with metal seat
Class VI with soft seat insert
NACE MR0175 and MR0103

Actuation
Integral multi-spring actuator

Accessories
A wide range of control instruments are available from Severn, including : Positioners, Air-filter Regulators, Volume Boosters, Solenoid Valves, and Lock-up Valves.

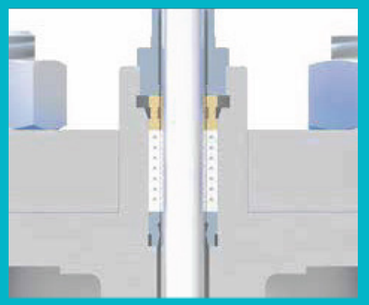
Valve Components





Globe Body

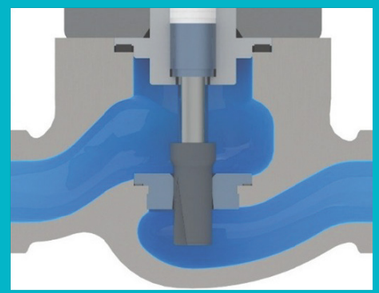
1600 Globe bodies with carefully designed streamlined flow passages offer excellent flow capacities.



Bonnet

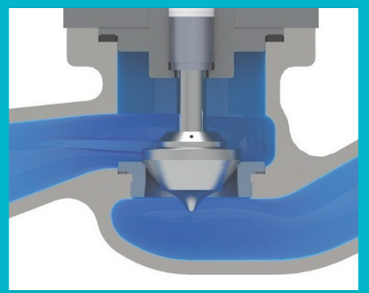
With PTFE packing standard bonnet is suitable to operate in a temperature range -29°C to 232°C.

Trim Options



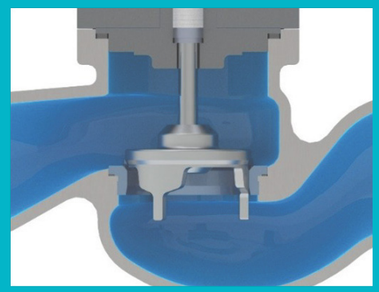
Micro Spline Trim

The trim manufactured in solid hard facing, the spline trim provides maximum erosion resistance and thus ensures prolonged performance in the field.



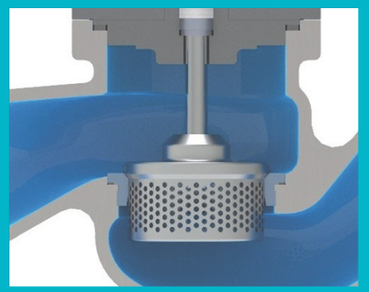
Contoured Trim

Unbalanced contoured plug with extended stem guiding enables perfect alignment of the trim components. The trim offers variety of Cv and trim characteristic options along with good rangeability. It is a perfect choice for viscous, dirty fluid and non lubricating process.



Ported Cage Plug

In this type the trim characteristic is achieved through the profile of the port opening. Multiple ports enable streamlined flow. Large cage guiding, interchangeability of trim parts and high flow capacity are the defining features of this design.



Drilled Hole Plug

Single ‘drilled hole’ cage design offers low pressure recovery that reduce the potential for excessive noise, cavitation, vibration and erosion.

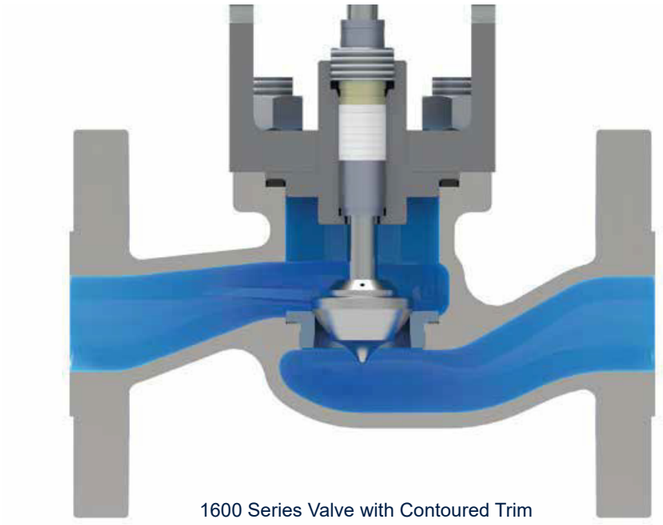
Trim Options (Continued)

Table 1 – 1600 Series - Trim material combinations

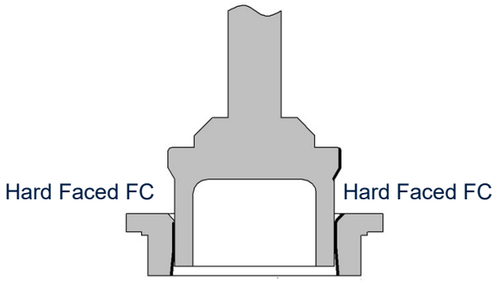
	Trim Type	Plug	Stem	Seat
Standard	Contoured	316/316L	316/316L	316/316L
	Micro spline	Solid Stellite	316/316L	316/316L Hard faced FC
	Ported / Drilled	316/316L	316/316L	316/316L Hard faced GA
Optional-1	Contoured	316/316L Hard faced FC	316/316L	316/316L Hard faced FC
	Ported / Drilled	316/316L Hard faced FC	316/316L	316/316L Hard faced FC
Optional-2 (for Class VI)	Contoured	316/316L + PTFE Insert	316/316L	316/316L
	Ported / Drilled	316/316L + PTFE Insert	316/316L	316/316L Hard faced GA

SA - Seat Area, FC - Full Contoured.

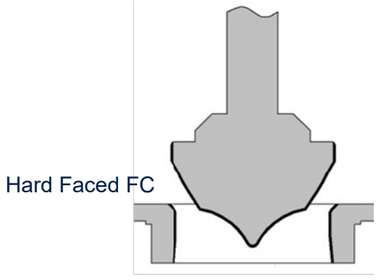
Hard Facing



1600 Series Valve with Contoured Trim



Ported / 1CC



Contoured trim

Gland Packing Options

Variety of packings are available to suit wide ranging requirements of the industry. Most commonly offered packing types include:

PTFE Chevrons

PTFE Chevrons are preferred for their excellent sealing capability, low friction and cost effectiveness. The operating temperature ranges from - 29°C to 232°C.

Graphite packing

Graphite packings are self lubricating and do not require external lubrication. They are suitable for a wide range of temperatures from -196°C to 450°C.

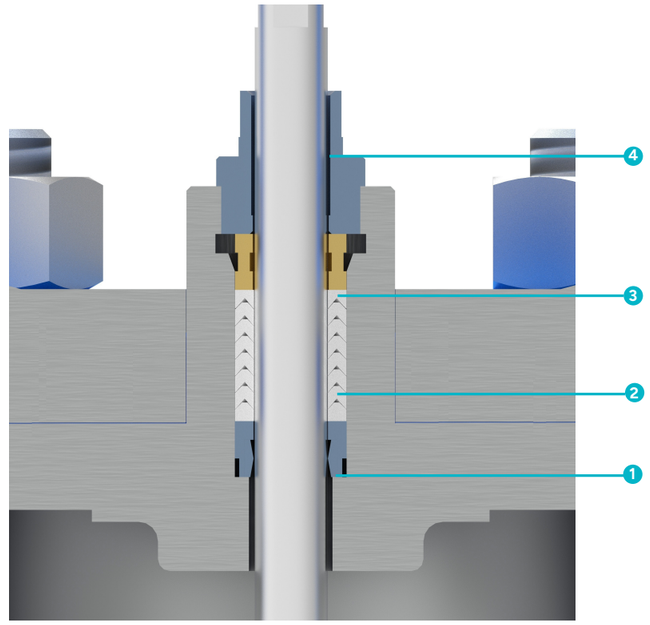


Table 2 - Stuffing box parts and materials

Item No	Component	Material
1	Guide Bush	316 SS & Virgin PTFE
2	Packing Rings	Virgin PTFE
3	Packing Spacer	316 SS
4	Screwed Gland Follower	316 SS Hard Faced

Flow Coefficients Cv

Table 3 – Microspline (1 Inch)

Valve Size (Inch)	Seat Bore (Inch)	Travel (Inch)	Flow Over
1	0.25	0.75	0.01
1	0.25	0.75	0.05
1	0.25	0.75	0.1
1	0.25	0.75	0.15
1	0.25	0.75	0.25
1	0.25	0.75	0.5
1	0.625	0.75	0.95
1	0.625	0.75	1.45

Table 4 – Microspline (1.5 Inch)

Valve Size (inch)	Seat Bore (Inch)	Travel (Inch)	Flow Over
1.5	0.25	0.75	0.01
1.5	0.25	0.75	0.05
1.5	0.25	0.75	0.1
1.5	0.25	0.75	0.15
1.5	0.25	0.75	0.25
1.5	0.25	0.75	0.5
1.5	0.625	0.75	0.95
1.5	0.625	0.75	1.45

Table 5 - Contoured (Unbalanced)

Valve Size	Seat Bore	Travel	Flow Under	
			Linear	EP
1	1.000	0.75	16.7	14.6
1.5	1.500	0.75	35	35

Table 6 - Ported Cage Plug (Unbalanced)

Valve Size	Seat Bore	Travel	Flow Under	
			Linear	EP
2	2.000	0.75	62	54
3	3.000	1.125	129	113
4	4.000	1.50	212	183
6	5.250	2.25	435	410

Table 7 - Drilled Hole Plug (Unbalanced)

Valve Size	Seat Bore	Travel	Flow Under	
			Linear	EP
2	2.000	0.75	32	21
3	3.000	1.125	85	53
4	4.000	1.50	138	98
6	5.250	2.25	322	233

Dimensions & Weight

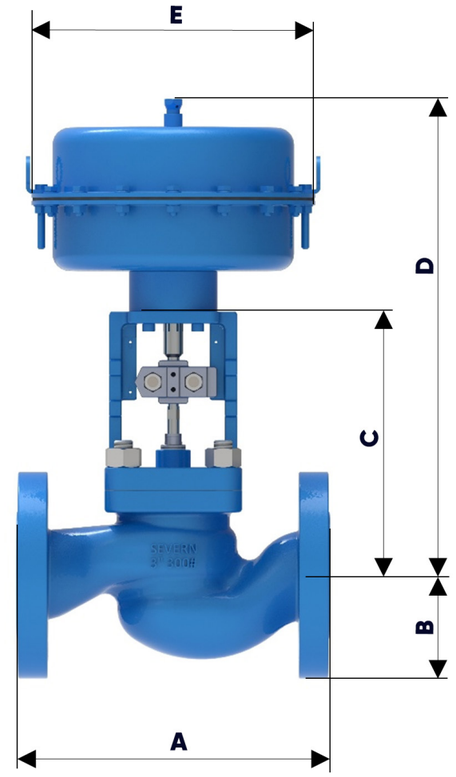


Table 8 - Actuator

Actuator Size	Travel	E	Weight (kg)
27	0.75	210	13
36	0.75 to 1.125	235	15
50	0.75 to 1.50	275	18
60	0.75 to 1.50	288	28
110	1.125 to 1.50	392	44
150	2.25	457	74
220	2.25	545	120

Table 9 - Valve

Valve Size	A		B		C	Valve Sub Assembly Weight (Kg)	
	ASME 150#	ASME 300#	ASME 150#	ASME 300#	ASME 150-300#	ASME 150#	ASME 300#
1	184	197	54	62	224	10	11
1.5	222	235	64	78	222	10	13
2	254	267	76	83	228	14	16
3	298	318	95	210	267	25	31
4	352	368	114	127	307	41	52
6	451	473	140	159	350	67	90

Table 10 - Valve & Actuator

Valve Size	D						
	Actuator Size						
	27	36	50	60	110	150	220
1	377	387	422	427	-	-	-
1.5	375	385	420	425	-	-	-
2	381	391	426	431	-	-	-
3	-	435	470	470	550	-	-
4	-	-	515	515	590	-	-
6	-	-	-	-	-	703	906