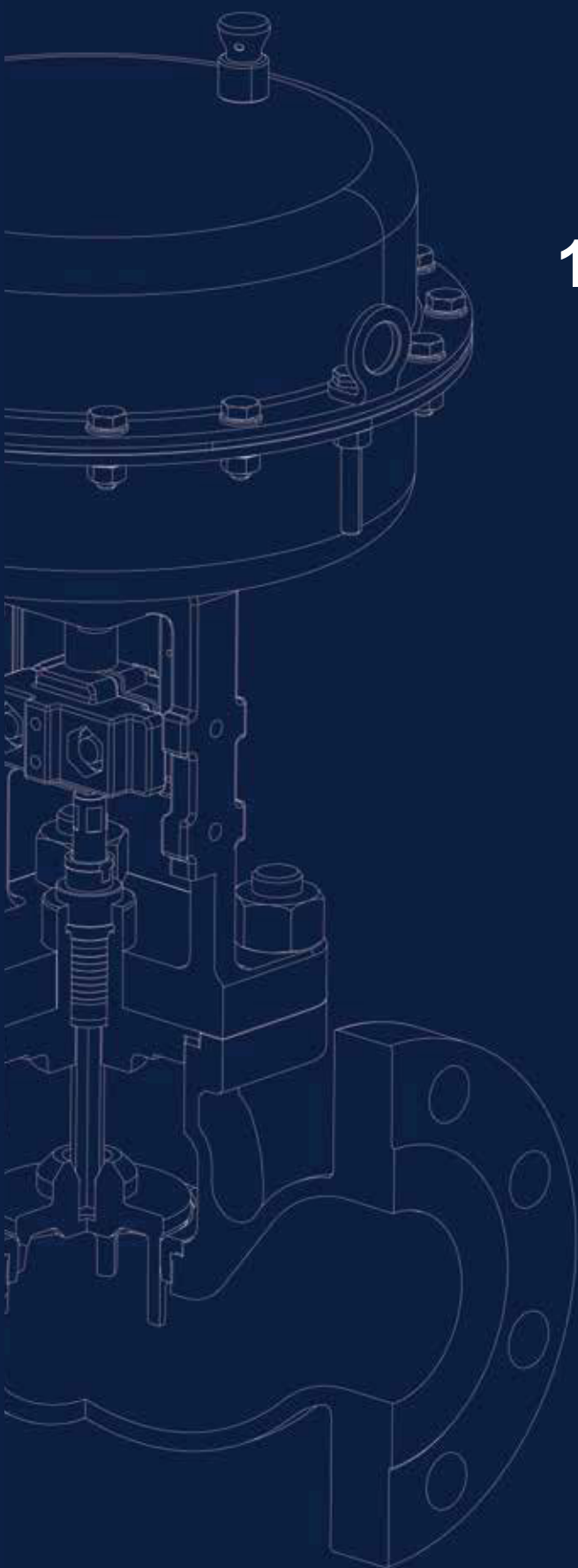




# 1600 Series Globe Valves

Pressure Class ASME 150-300

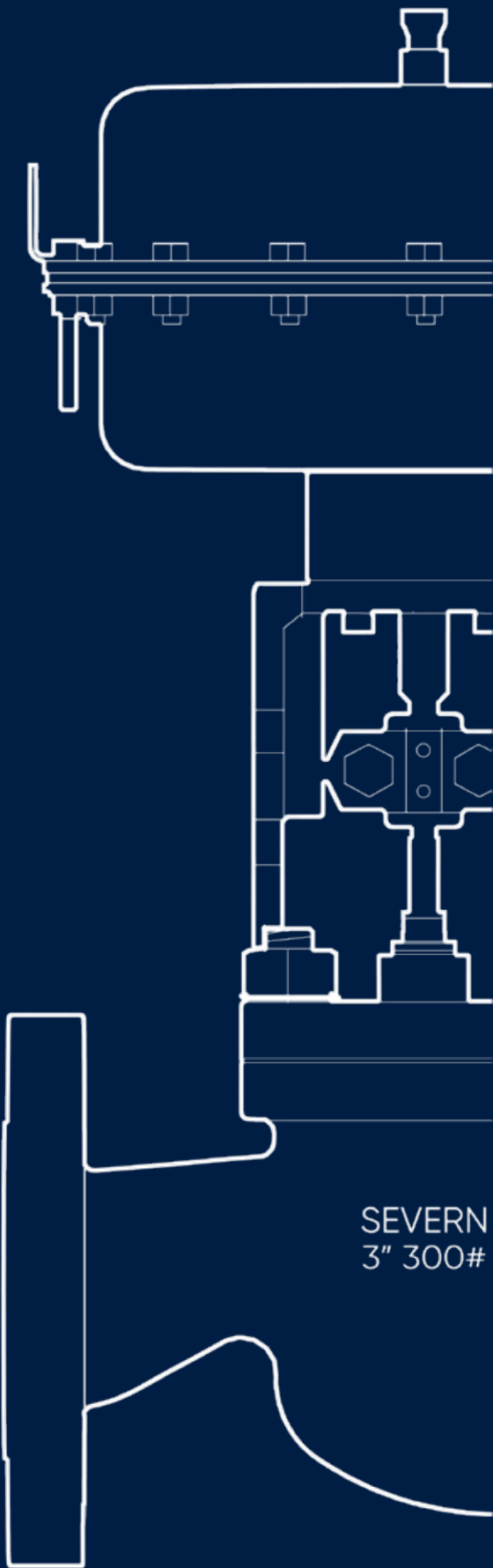


It all flows from expertise.



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# 1600

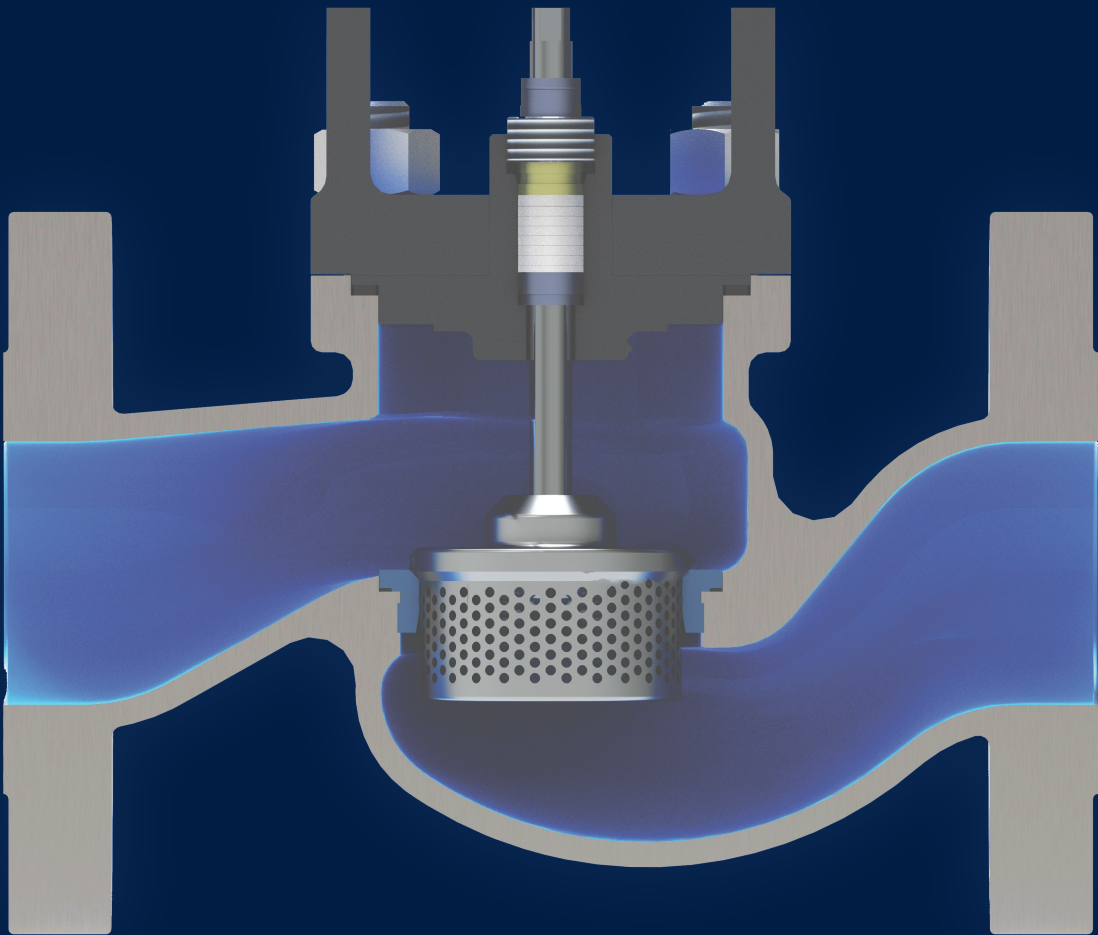
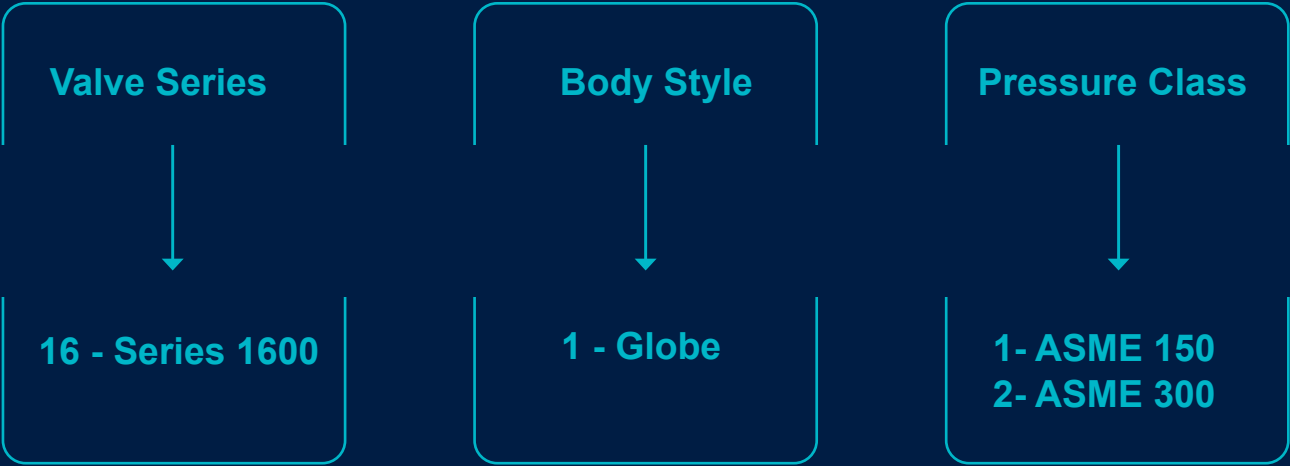
## Series

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.



# 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 Chevrans

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

Seat guided cage

Ported with seat guided

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

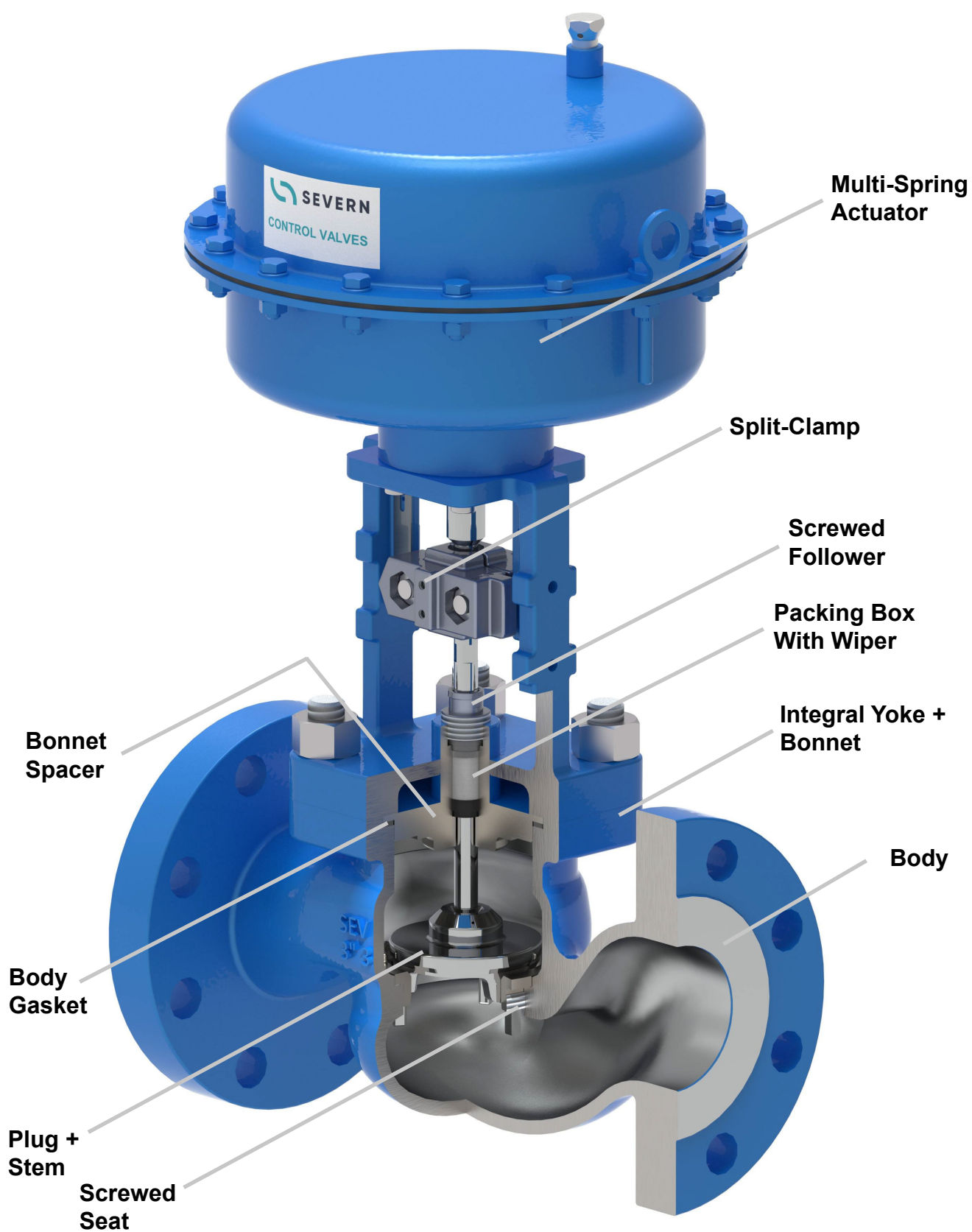
### Actuation

Integral multi-spring actuator

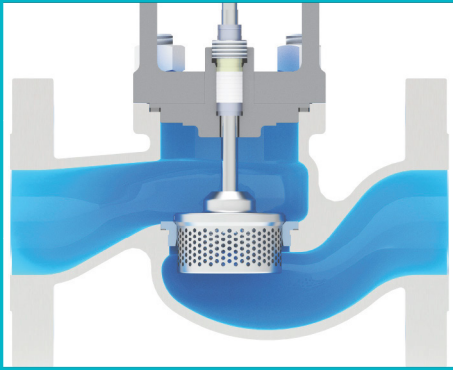
### Accessories

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

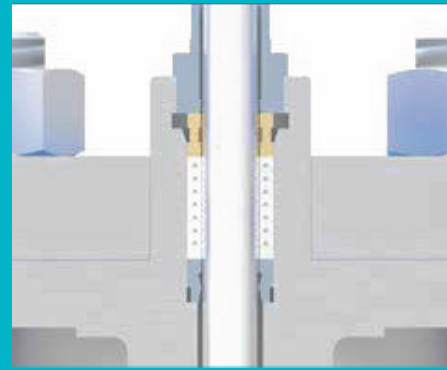






### Globe Body

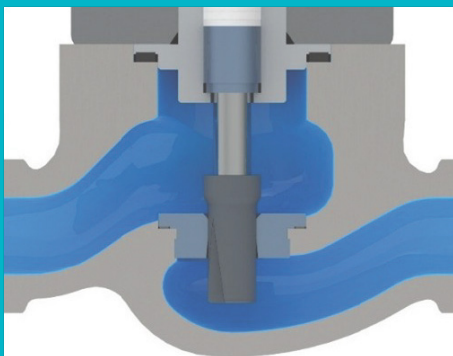
1600 Globe bodies with carefully designed streamlined flow passages offer excellent flow capacities.



### Bonnet

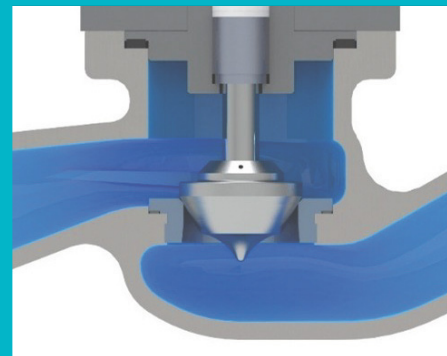
With PTFE packing standard bonnet is suitable to operate in a temperature range -29°C to 232°C.

## 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

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.



### 1CC Concentric Cage Trim

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

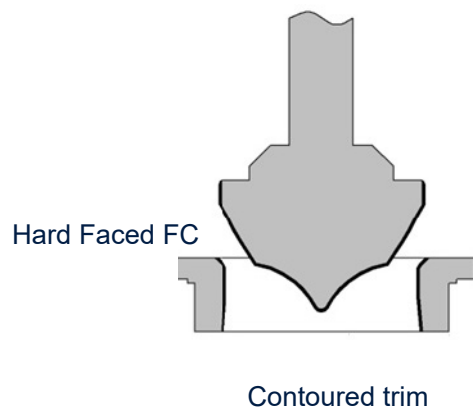
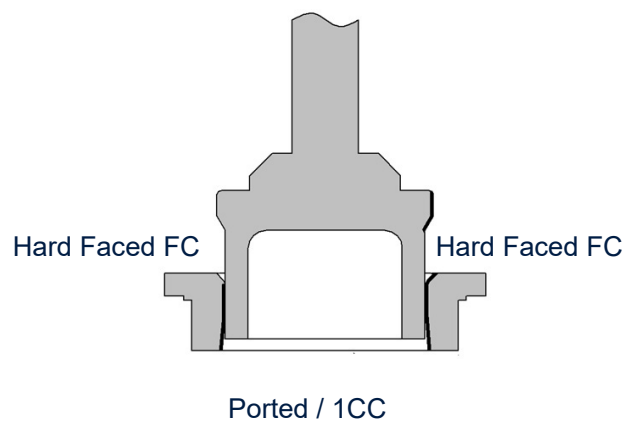
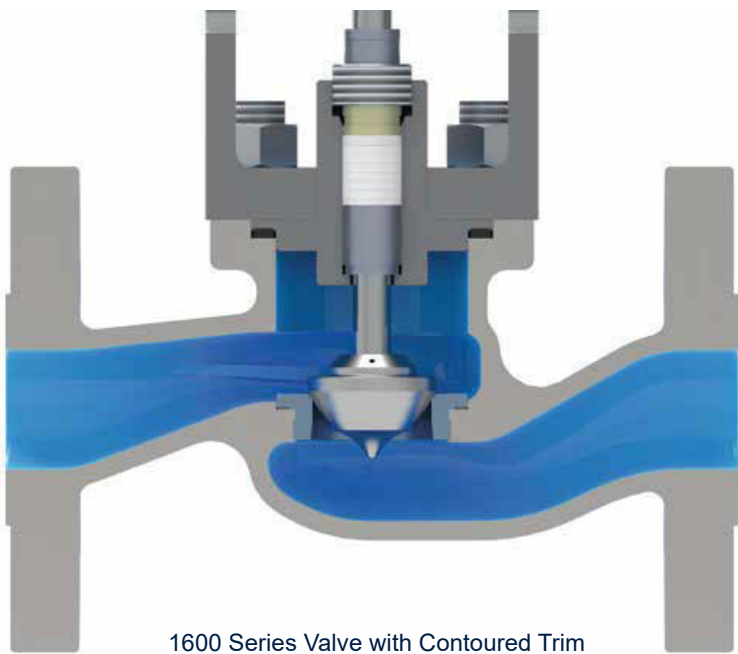
# Trim Options (Continued)

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 / 1CC	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 / 1CC	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 / 1CC	316/316L + PTFE Insert	316/316L	316/316L Hard faced GA

SA - Seat Area, FC - Full Contoured.

## Hard Facing





# 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.

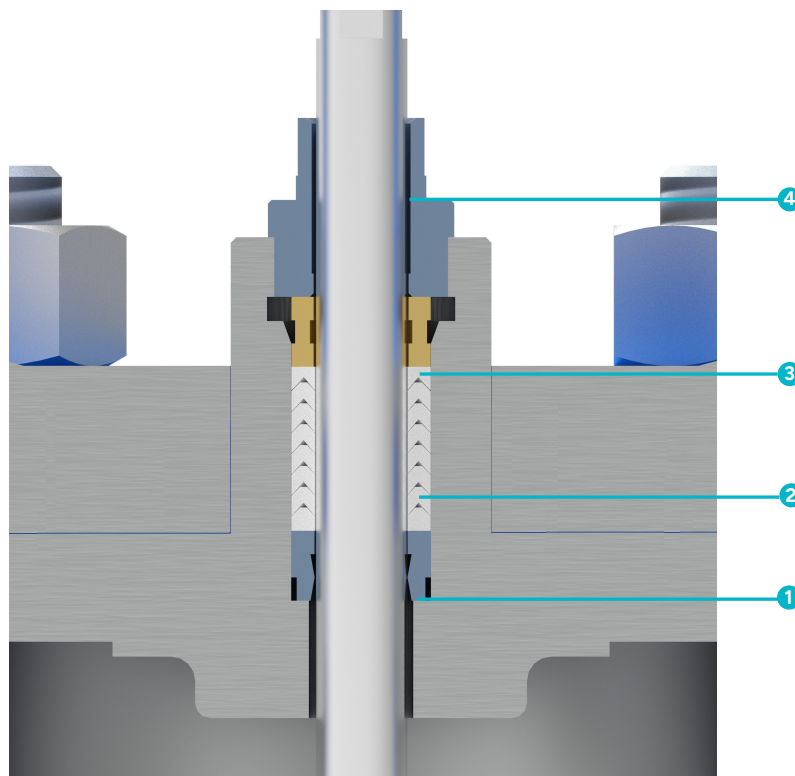


Table 2 - Stuffing box parts and materials

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 (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 - 1CC (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

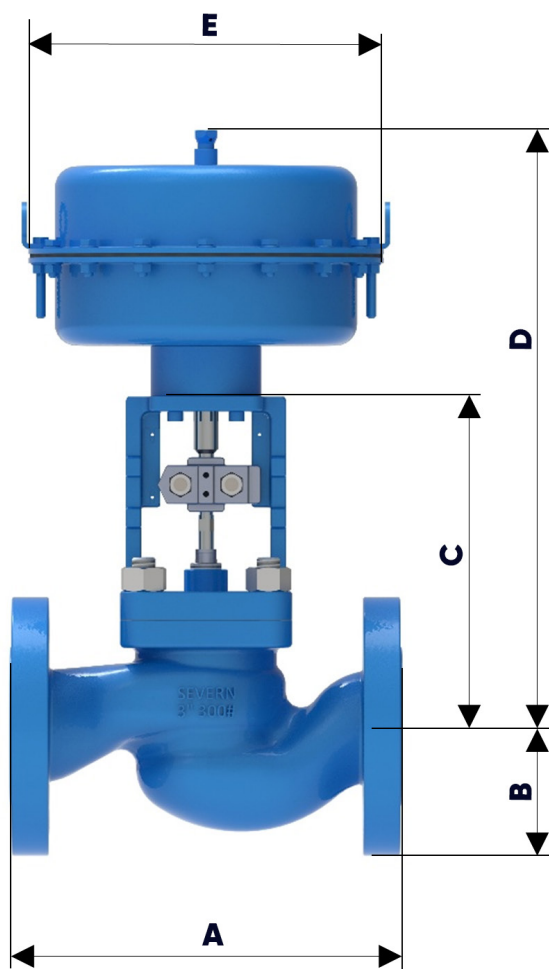


Table 8 - Actuator

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



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