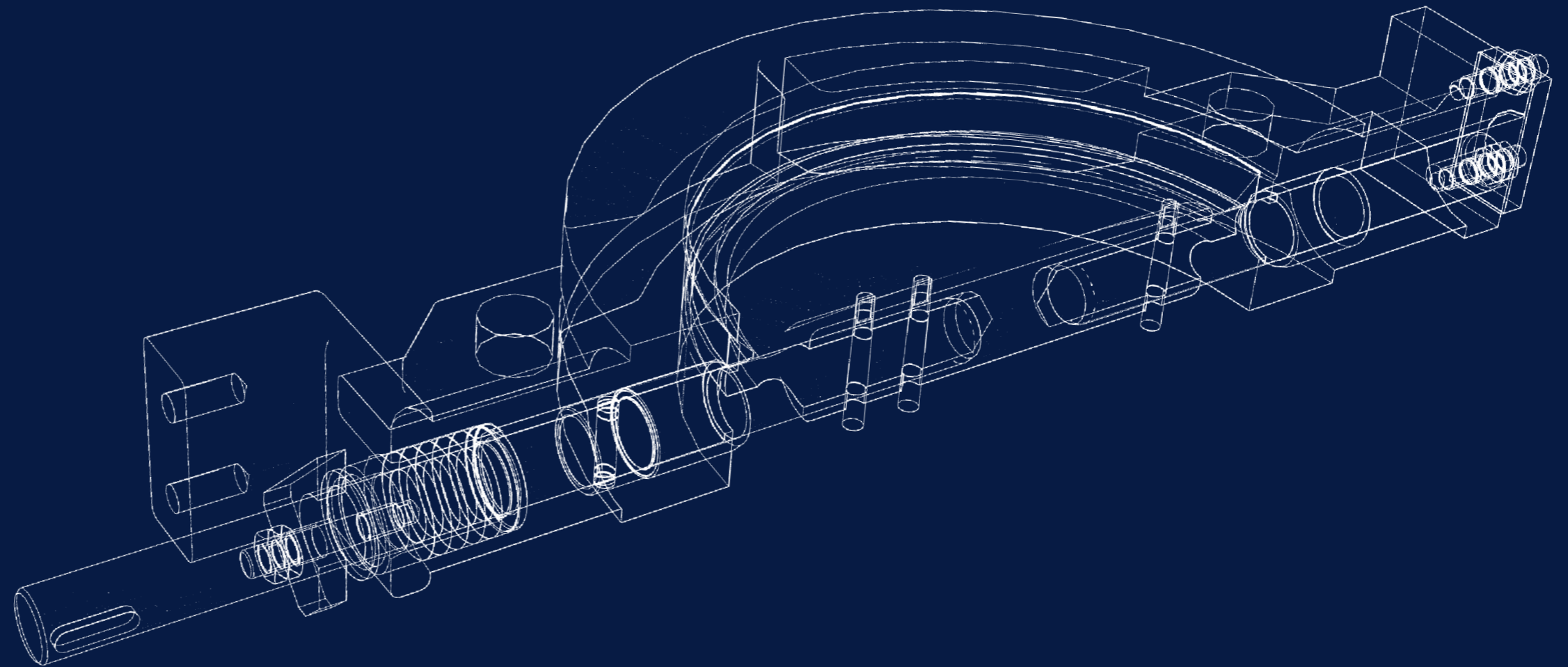


# 8100 and 8200 Series

Swing Clear and Step Seat Butterfly Valves



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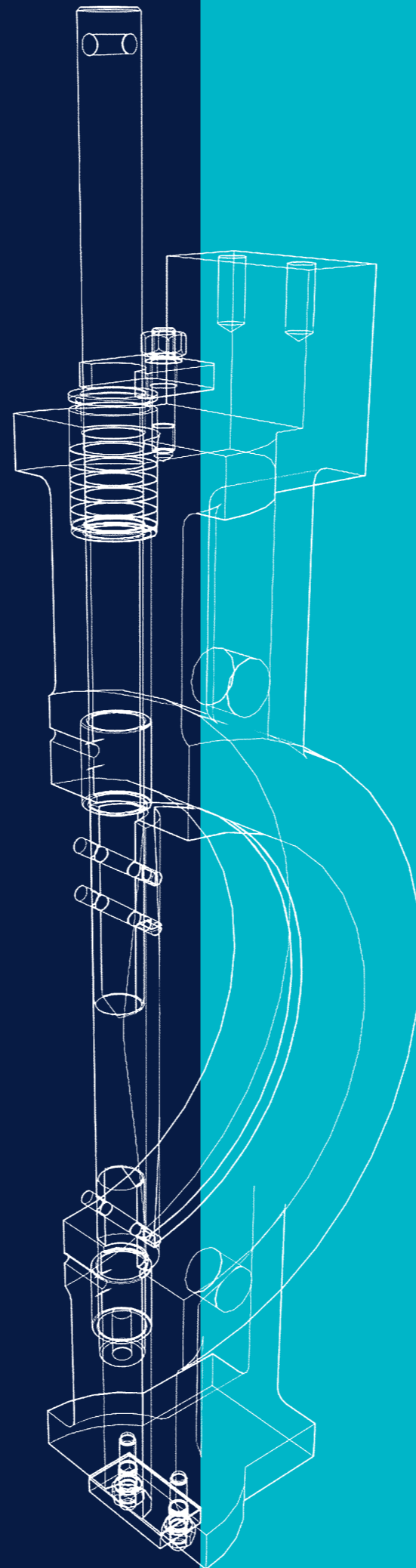
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# 8100 8200 SERIES

Our Swing Clear and Step Seat Butterfly Control Valves are designed to control the flow of liquids and gases for more severe applications typically encountered in chemical and petrochemical applications where a complete tight shut-off is not essential.

Our types of Swing Clear and Step Seat valve bodies include Wafer, Lugged, Double Flanged and Butt Weld Ends. The discs have a streamlined shape which provides minimum resistance to flow and, on larger valve ribs, are incorporated for extra strength. Special clearance is provided between body and disc to prevent seizure in valves used at elevated temperatures.



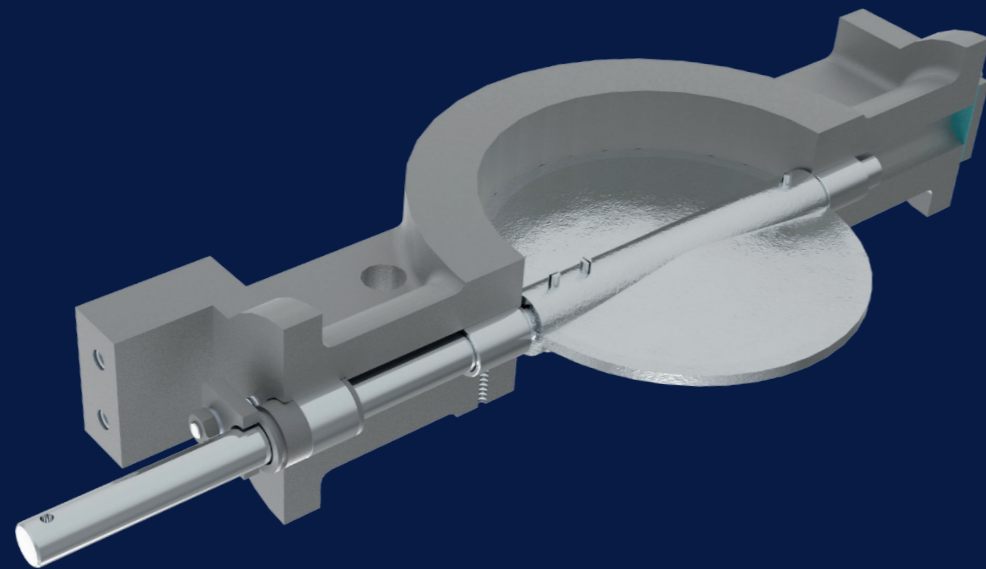
# Engineering data

## Swing Clear and Step Seat – Design features

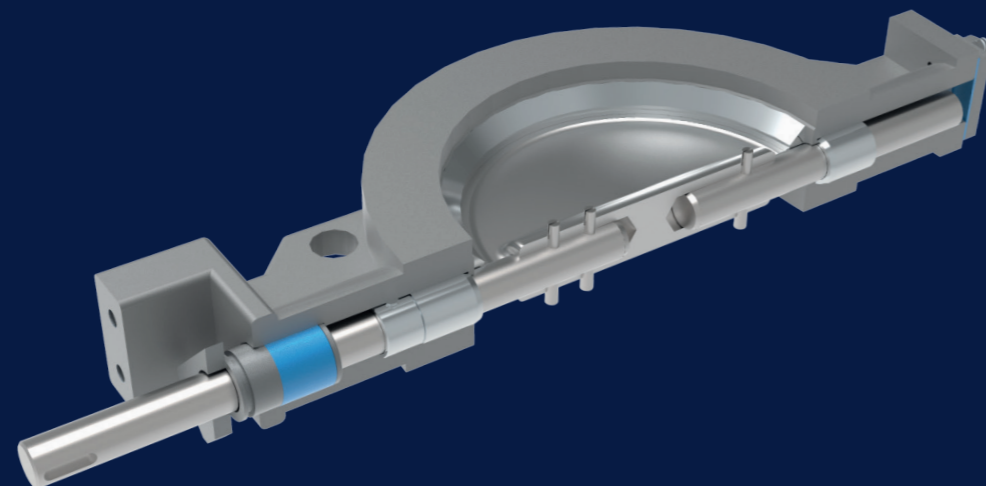
- ✔ Designed to control the flow of liquids and gases for more severe applications generally encountered in chemical and petrochemical applications where a complete tight shut-off is not essential
- ✔ The 'swing clear' disc which has no contact with the valve body enables the valves to be used with high pressures and a wide range of temperatures
- ✔ Reduced leakage can be obtained with our Step Seat valves on limited applications, high and low temperature gasses
- ✔ Sizes from 2in (50mm) up to 88in (2200mm)
- ✔ Streamlined shape disc which provides minimum resistance to flow and on larger valves ribs are incorporated for extra strength
- ✔ Standard pattern valves are generally designed to suit a static maximum pressure up to 10 Bar and pressure differentials depending on valve size and construction
- ✔ Heavy pattern valves are for heavy duty services to suit static pressure in excess of 10 Bar and pressure differential depending on valve size and construction
- ✔ Temperature ranges of -196°C up to 1000°C

## Performance benefits

- ✔ Low torque
- ✔ Maximised Cv
- ✔ Hard facing options available for improved abrasion resistance
- ✔ Available with a range of low noise and anti-cavitation trims
- ✔ Reliable performance



8100 Swing Clear Butterfly Section



8200 Step Seat Butterfly Section

# Engineering data (Continued)

### End connection sizes/types

2in (50mm) – 88in (2200mm). Wafer, Lugged, Flanged or Butt Weld Ends. For other styles please contact us.

### Valve body ratings

ASME 150 – ASME 2500 EN 1092 PN 10 to PN 400

### Body configurations

Wafer, Lugged, Double Flanged and Butt Weld End

### Body face to face dimensions

API 609/ISO 5752 & B16.10 with non-standard dimensions available on request

### Bonnet styles

Standard, low temperature and high temperature

### Standard valve packing

Teflon and graphite

### Trim options

Anti-Cavitation, contoured trim and baffles

### Anti-Cavitation for Concentric Disc

The 'Anti-Cavitation' trim extends the range-ability of conventional butterfly control valves by ensuring stable and progressively smooth operation in the nearly/semi closed disc position.

Accurate and repeatable inherent flow characteristics can be obtained.

### Baffles

Baffles can be fitted in the outlet of the butterfly valve by extending the face to face to allow free rotation of the valves disc. Integral valve baffles are often fitted in conjunction with a full 'Anti-Cavitation' trim giving a maximum noise attenuation and resistance to cavitation.

### Contoured Disc

The Severn contour disc gives extended range-ability by increasing the turbulence and flow forces around the valve disc. Less complex than the 'Anti-Cavitation' trim, the contour disc gives improved stability where cavitation and noise are not likely to be a problem.

### Seat leakage class

Up to ANSI/FCI 70.2. Class I & II (Swing Clear) up to Class III (step seat)

### Construction 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, aluminum bronze, titanium and high nickel alloys. Stellite, and other hard facings/coatings are available. For further details on materials please contact us.

### Paint

A wide range of paint finishes are available including enamel, alkyd gloss and various epoxy finishes.

### Clean build

Severn maintains high clean build standards-utilising clean build areas including Oxygen clean and a Ultra High Purity clean room.

### Actuation

We offer a wide range of actuators including – pneumatic scotch yoke and rack and pinion, electric, hydraulic, electro hydraulic and manually operated.

### Instruments

A wide range of control instruments are available from Severn including positioners, air-filter regulators, volume boosters, solenoid valves, and lock-up valves.

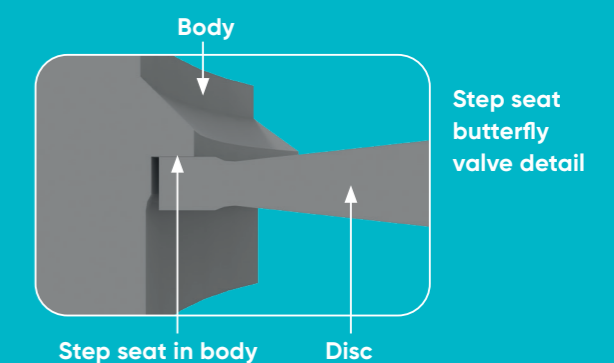
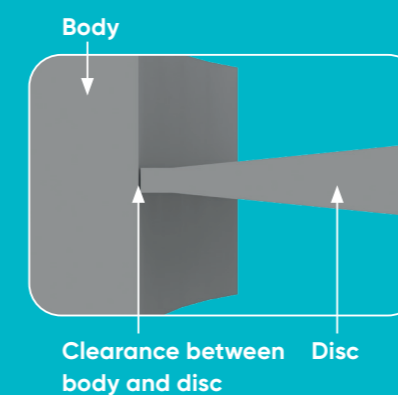
### Bespoke options

Steam jackets, purge connections, outboard bearings and 3 Way valve options available.

### Applications

- ✔ Cryogenic
- ✔ High temperature
- ✔ Oil and gas
- ✔ LNG
- ✔ Power generation
- ✔ Industrial gas
- ✔ Naval marine

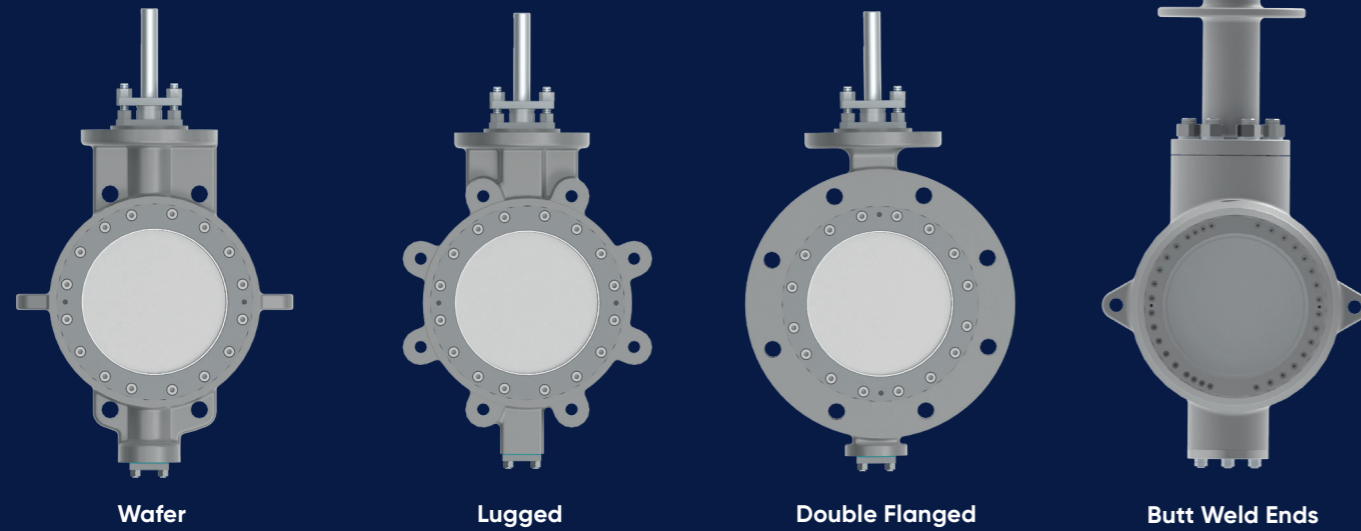
## Swing Clear and Step Seat valve, seat area detail



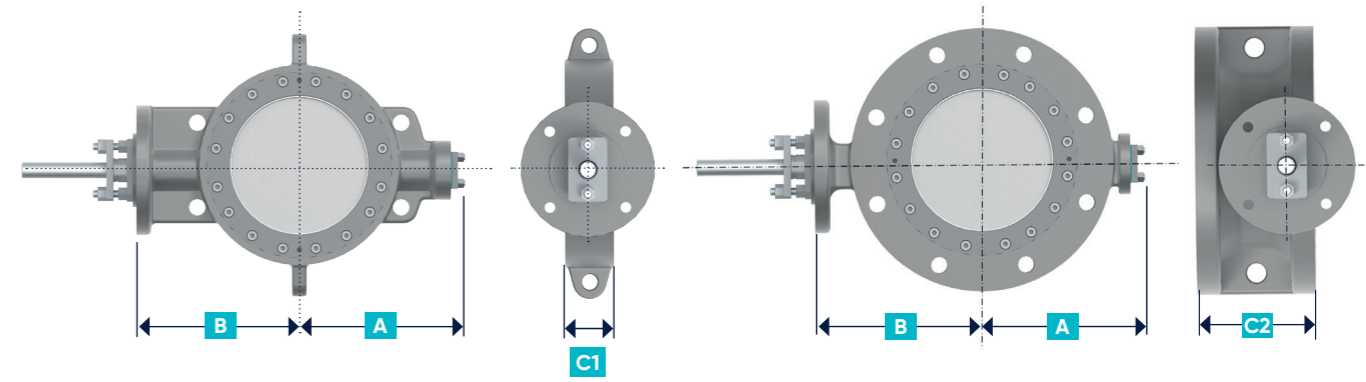
# Engineering data (Continued)

## Valve body style options

The 8100 and 8200 series valves are available in 4 basic body styles, Wafer, Lugged and Double Flanged (long and short pattern) and BWE. Special face to face options are available on request.



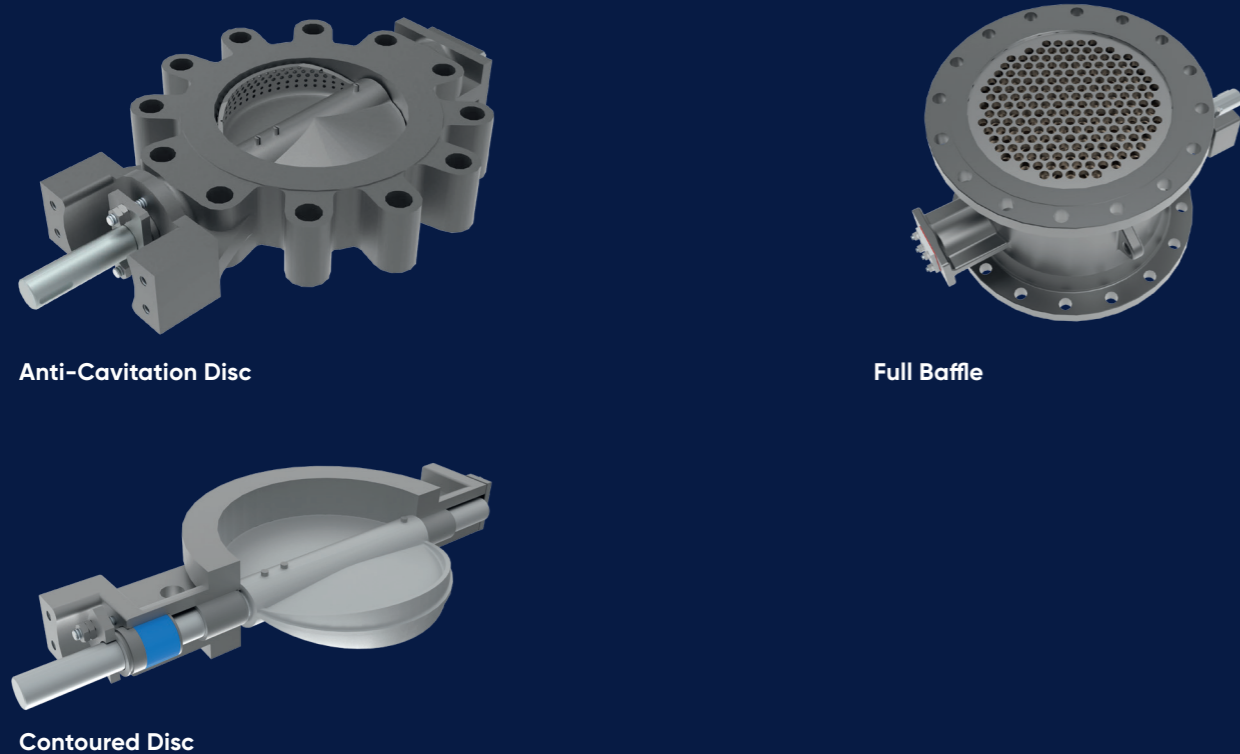
## Dimensions



SIZE	TOV 150#			
	A	B	C1	C2
50mm (2")	106	129	52	114
80mm (3")	123	161	52	114
100mm (4")	171	169	52	127
150mm (6")	201	207	56	140
200mm (8")	231	247	60	152
250mm (10")	270	295	68	165
300mm (12")	290	335	78	178
350mm (14")	313	357	78	190
400mm (16")	355	385	78	216
450mm (18")	390	405	78	222
500mm (20")	415	442	78	229
600mm (24")	460	515	100	267

SIZE	TOV 300#			
	A	B	C1	C2
50mm (2")	106	129	52	114
80mm (3")	123	161	60	114
100mm (4")	186	210	52	127
150mm (6")	220	245	70	140
200mm (8")	235	270	78	152
250mm (10")	327	317	92	280
300mm (12")	380	375	110	178
350mm (14")	395	385	130	190
400mm (16")	455	460	115	216
450mm (18")	465	465	160	222
500mm (20")	505	510	160	229
600mm (24")	570	270	180	267

## Trim options available



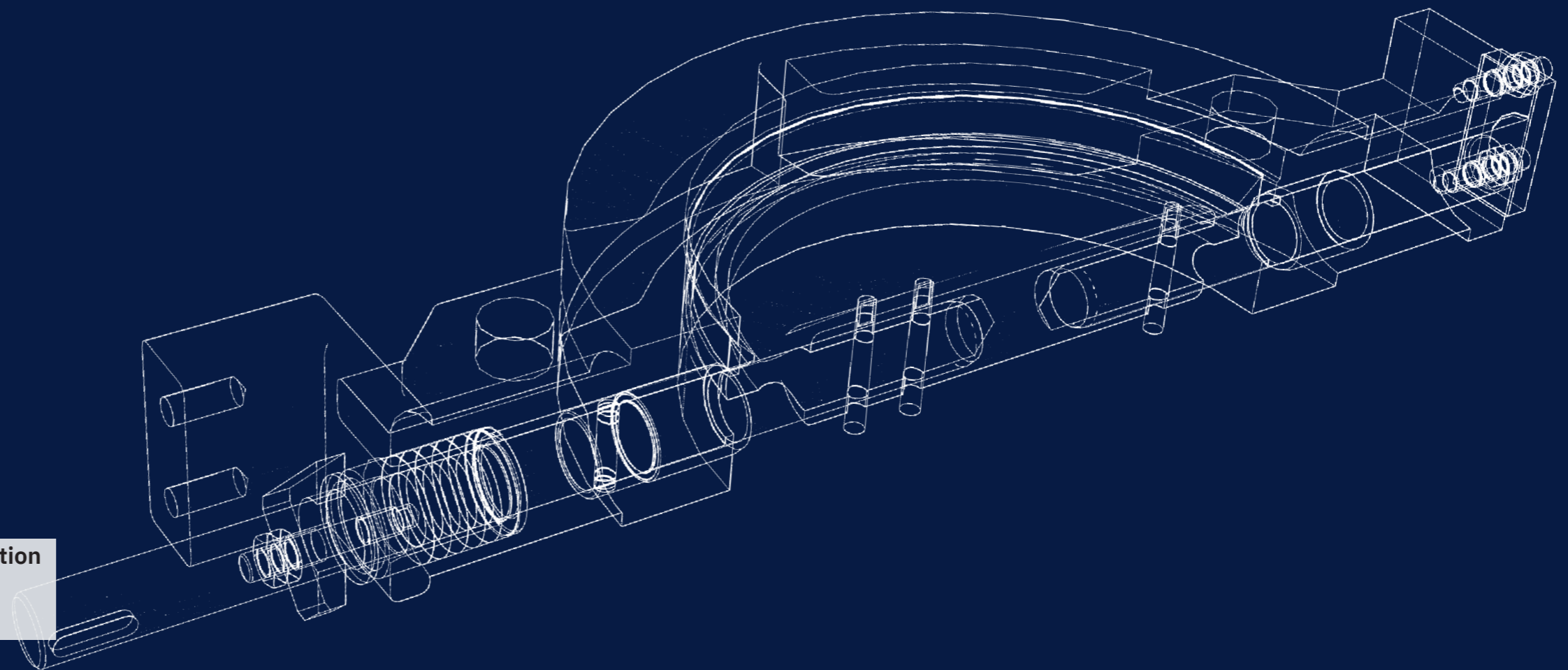
## Flow Coefficients Cv

SIZE	0	10	20	30	40	50	60	70	80	90
50	0.6	2.4	8.6	17.0	29.0	48.0	74.0	106.0	148.0	184.0
65	1.0	3.8	13.6	27.0	47.0	77.0	119.0	173.0	242.0	297.0
80	1.3	5.6	17.0	35.0	64.0	107.0	176.0	282.0	442.0	550.0
100	2.3	9.0	28.0	61.0	111.0	184.0	294.0	423.0	552.0	606.0
125	3.8	13.7	44.0	97.0	175.0	285.0	463.0	685.0	940.0	1084.0
150	5.3	19.6	65.0	141.0	254.0	422.0	669.0	991.0	1398.0	1635.0
200	9.5	36.0	126.0	265.0	469.0	773.0	1221.0	1797.0	2527.0	2965.0
250	15.0	58.0	206.0	428.0	750.0	1231.0	1935.0	2842.0	3985.0	4819.0
300	21.0	87.0	307.0	630.0	1097.0	1793.0	2814.0	4124.0	5785.0	7119.0
350	27.0	107.0	381.0	787.0	1375.0	2254.0	3540.0	5134.0	7041.0	8515.0
400	36.0	142.0	514.0	1053.0	1833.0	2997.0	4666.0	6811.0	9311.0	11424.0
450	45.0	184.0	667.0	1358.0	2356.0	3843.0	5985.0	8725.0	12022.0	14805.0
500	56.0	222.0	807.0	1651.0	2871.0	4693.0	7350.0	10678.0	14700.0	18375.0
600	88.0	338.0	1211.0	2448.0	4235.0	6898.0	10794.0	15645.0	21630.0	27037.0
700/28"	111.0	448.0	1620.0	3284.0	5691.0	9273.0	14479.0	21101.0	29253.0	36078.0
750/30"	127.0	522.0	1893.0	3842.0	6661.0	10857.0	16936.0	24738.0	34335.0	42105.0
800/32"	145.0	591.0	2147.0	5248.0	7527.0	12262.0	19116.0	27916.0	38898.0	47649.0
900/36"	186.0	752.0	2741.0	5528.0	9548.0	15540.0	24202.0	35332.0	49245.0	60585.0
1000/40"	243.0	1000.0	3510.0	7110.0	12320.0	20100.0	31500.0	46100.0	64500.0	77800.0
1050/42"	255.0	1050.0	3685.0	7465.0	12936.0	21105.0	33075.0	48405.0	67725.0	81690.0
1200/48"	335.0	1386.0	4920.0	9922.0	17115.0	27930.0	43697.0	63840.0	89460.0	109305.0
1350/54"	430.0	1774.0	6334.0	12705.0	21945.0	35700.0	55545.0	81220.0	112320.0	138500.0
1500/60"	525.0	1236.0	7665.0	15540.0	26880.0	43837.0	68607.0	100205.0	139315.0	174200.0
1650/66"	636.0	2614.0	9408.0	19005.0	32865.0	53445.0	83370.0	122000.0	170000.0	210100.0
1800/72"	760.0	3223.0	11445.0	22890.0	39375.0	64050.0	100065.0	145980.0	197020.0	252100.0

\*Note - Typical Cv Values Only

# 8100 and 8200 Series

## Swing Clear and Step Seat Butterfly Valves



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