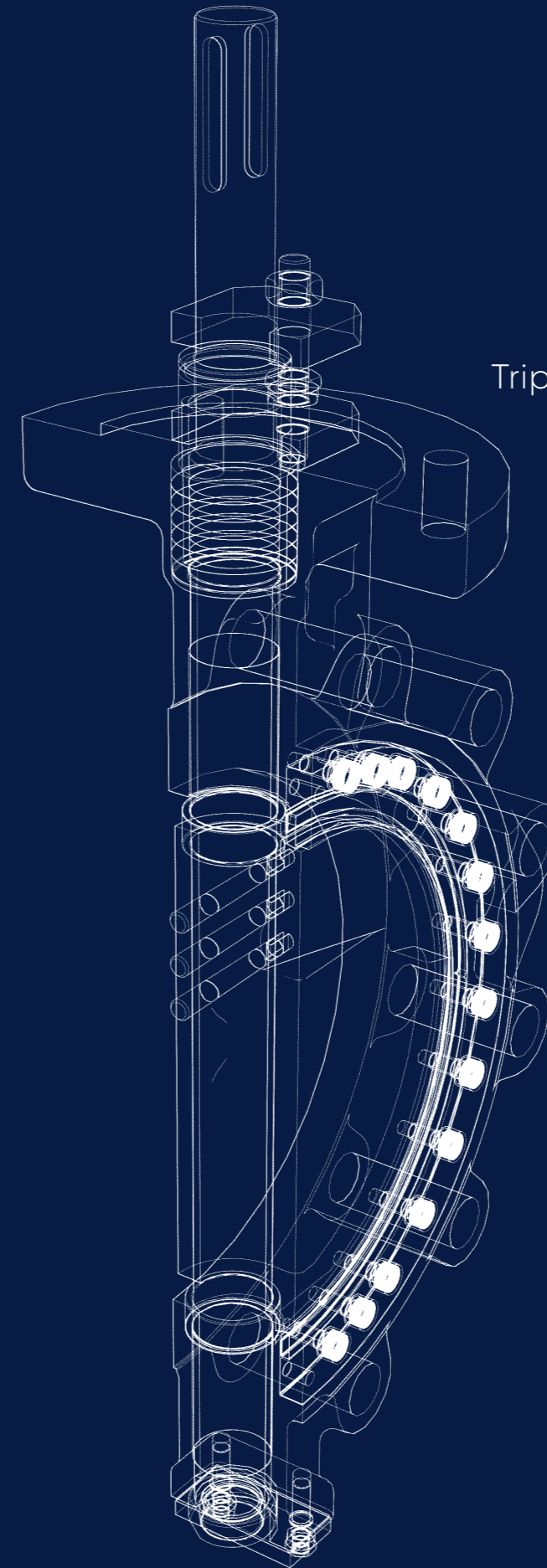


8500 OCT Series

Triple Offset Butterfly Control Valves



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.

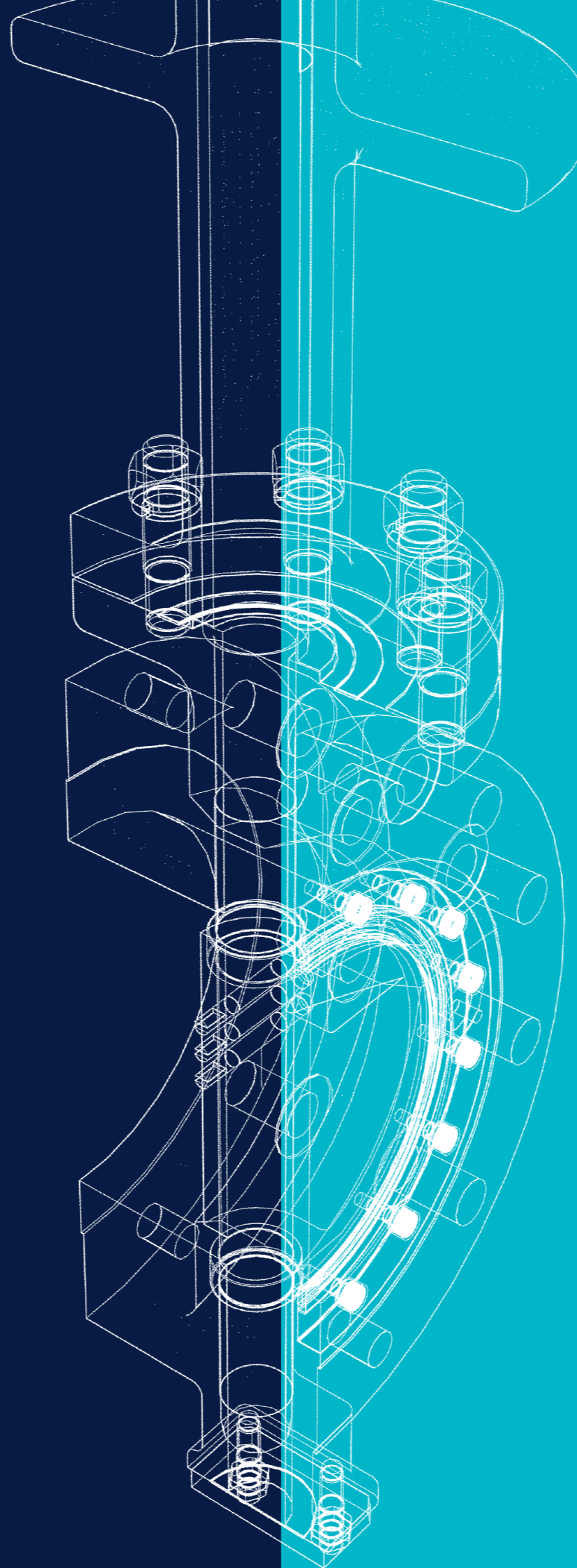
T: +91 44 4710 4200
E: sales@severnvalve.com



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8500

OCT SERIES

The Severn OCT® may be the first triple offset butterfly valve designed from the outset to provide the ultimate in cutting edge butterfly control valve technology.

Incorporating over 60 years of Engineering Excellence and experience in butterfly control engineering and application, Severn can offer an industry leading and patented engineering technology solution for your butterfly valve requirements.

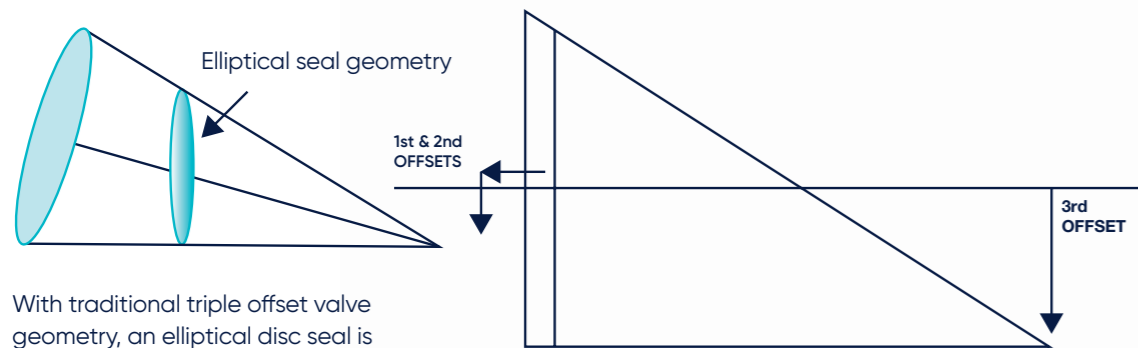
Incorporating Severn's 'Repair Intelligence' capabilities which involves providing real market feedback from extensive in-depth analysis from failed valves, Severn have designed each facet of this valve to provide the most accurate, reliable, and robust service capability possible to help you achieve your core remit of safe operations and minimum downtime.

OCT® – The Art of Control

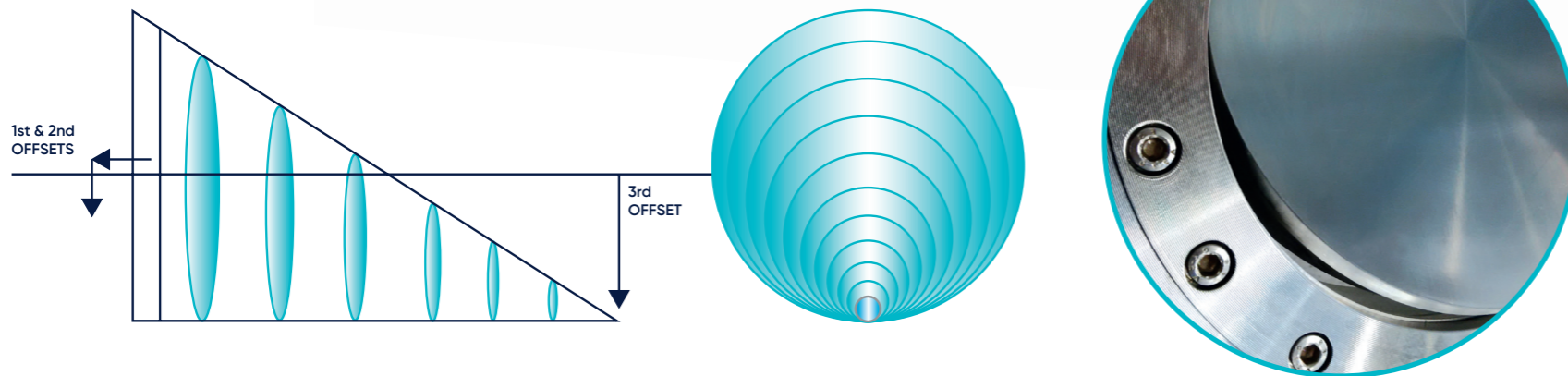
The simplicity and ingenuity of OCT® represents the next generation of our pursuit of providing the ultimate in butterfly control valve technology.

Severn OCT® Technology

Traditional Triple Offset Design



OCT® – Breaking Tradition



Process Benefits

- ✓ Internal bolting removed or minimised to avoid risk of vibration loosening
- ✓ Disc shaped and optimised for smooth fluid flow control
- ✓ Direct anti-cavitation trim capability for increased pressure recovery, lower noise and reduced dynamic torques
- ✓ Circle geometry maximises Cv without compromising sealing capability
- ✓ Floating disc ensures excellent operational temperature capability
- ✓ Low emission gland to ISO15848 Part 2, class B
- ✓ Hard facing options for maximum wear resistance on abrasive service



Engineering data

OCT® – Design Features

- ✔ Patented "OCT®" sealing technology designed from the outset to provide the ultimate in cutting edge butterfly control valve technology
- ✔ Interchange seals as standard
- ✔ Torque seated design ensures consistent sealing performance
- ✔ The quarter turn design ensures ease of actuation for both control and on/off duties
- ✔ Low emission certified gland arrangement to ISO 15848 and Shell 77/312 available
- ✔ Standard face to face dimensions to API 609/ISO 5752 and B16.10 with non-standard dimensions available on request
- ✔ Valve size range – 80mm (3") – 600mm (24") with larger sizes up to 72" on request
- ✔ Body pressure ratings up to 2500lb
- ✔ Temperature ratings from -196°C to + 600°C
- ✔ Can be manufactured in all commercially available metals in Cast, Forged or Plate form

Performance Benefits

- ✔ Torque energised seal for low and high pressures
- ✔ Self-compensating design for wear and temperature
- ✔ No internal bolting to come loose due to vibration
- ✔ Disc supplied hard faced as standard for improved abrasion resistance
- ✔ Available with a range of low noise and anti-cavitation trims
- ✔ Fully in-field serviceable
- ✔ Reliable performance. Bubble tight shutoff available

OCT – Laminated Seal – The traditional triple offset seal, utilising the industry proven graphite metallic laminate with the benefits of Severn's OCT infinite circle geometry

- ✔ A body mounted seal reduces wear and graphite "washout" that can affect other valves with a disc mounted seal

OCT – Solid Seal – Used when the line media is particularly arduous

- ✔ Eliminating the use of graphite / Polymer in the flow path whilst achieving leakage up to class IV

OCT – HS – The OCT® HS, is a triple offset butterfly valve that is designed to meet the precise demands of the Oil & Gas industry. The valve is particularly suitable for gas service by offering the advantages of a hybrid polymeric seal, allied with triple offset geometry and a fully anti-static design.

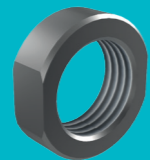
- ✔ Our hybrid Polymeric seal provides consistent leak tight sealing, particularly suited for gas service
- ✔ The HS seal is fully interchangeable with the laminated and solid seals
- ✔ The polymer seal is fully compliant with EN ISO 80079-36 (ATEX) requirements
- ✔ Firesafe certification available

OCT – SW – The OCT® SW is a triple offset, firesafe certified valve that by design, prevents the risk of galvanic corrosion by removing all graphite from contact with the line media

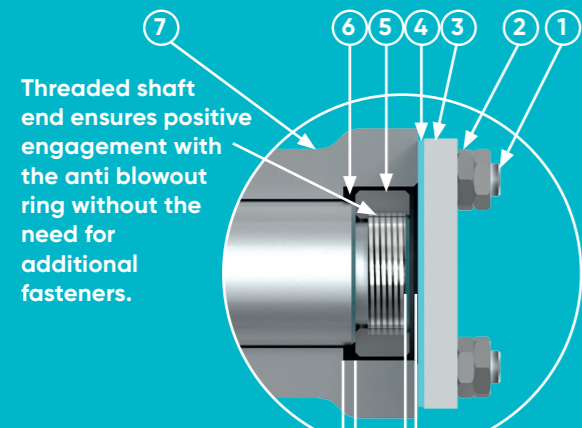
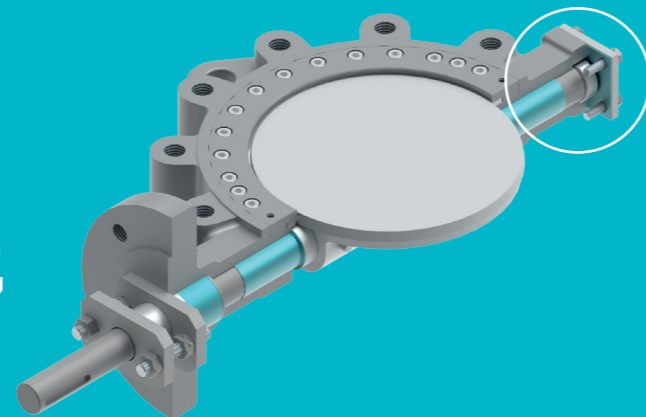
- ✔ No graphite in contact with the line media to remove the risk of galvanic effects
- ✔ Hybrid polymer metallic seal works without the need for additional graphite gaskets
- ✔ Both gland and blank end graphite seals are fully isolated from contact with line media

Dual Anti Blowout Design

No.	Component	Quantity
1	Blank end stud	4
2	Blank end lock nuts	8
3	Blank end plate	1
4	Blank end gasket	1
5	Anti blowout ring	1
6	Shaft	1
7	Valve body	1

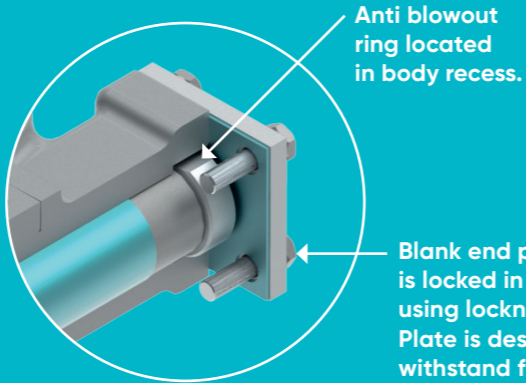


Internal anti blowout ring



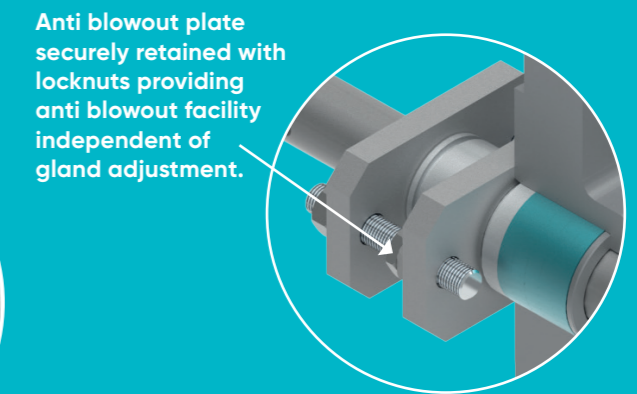
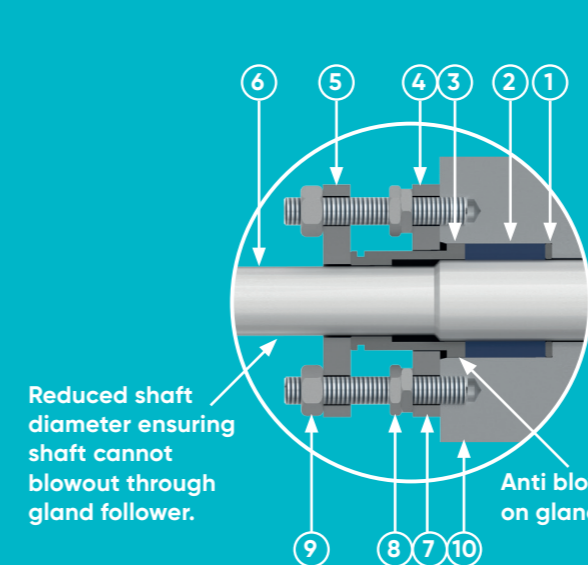
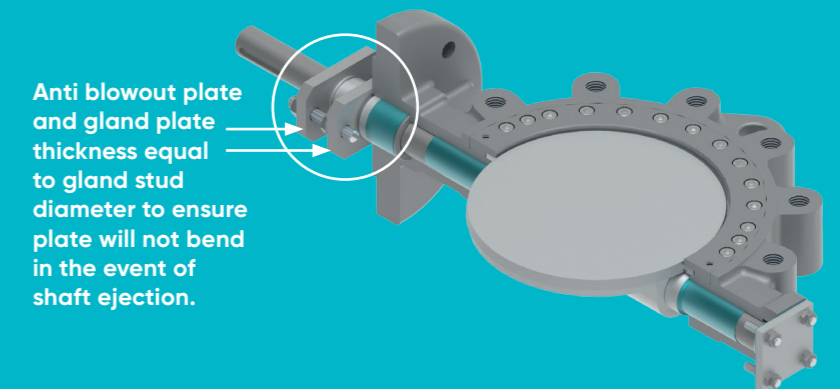
Clearance between ring and body ensures no galling or pickup between the two components without the need for additional thrust washers.

Minimal clearance between ring and blank end plate ensures collar cannot unscrew during operation.



Blank end plate is locked in place using locknuts. Plate is designed to withstand full shell test pressures.

No.	Component	Quantity
1	Gland ring	1
2	Packing rings	5
3	Gland follower	1
4	Anti blowout plate	1
5	Gland plate	1
6	Shaft	1
7	Gland stud	2
8	Anti blowout lock nuts	4
9	Gland nuts	2
10	Valve body	1



Anti blowout lip on gland follower.

Engineering data (continued)

End connection sizes/types

3in (80mm) – 24in (600mm). Larger sizes up to 72in available on request. Wafer, Lugged, Double 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, high temperature and cryogenic.

Standard valve packing

Teflon and Graphite.

Trim options

Anti Cavitation, Baffles, Half Baffles and Hard Faced.

Seat leakage class

Up to ANSI/FCI 70.2. Class IV to VI, API 598 Zero available on request.

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 Solutions

We can offer bespoke tailored solutions to suit specific customer needs, these include reduced diameter internals, steam jackets and 3 way valves etc.

Applications

The Severn OCT® may be the first triple offset butterfly valve designed from the outset to provide the ultimate in cutting edge butterfly control valve technology.

Examples Include

Offshore Platform and FPSO

- ✔ Seawater lift pump back pressure control
- ✔ Ballast water flow control
- ✔ Hydrocarbon gas flow control
- ✔ Fire main bypass control

Refinery

- ✔ Flare gas control
- ✔ Flow Balancing for Fiscal Metering

Power Generation

- ✔ LP and MP Steam control
- ✔ Cooling water flow and back pressure control
- ✔ Cooling Tower de-icing

LNG Storage and Transportation

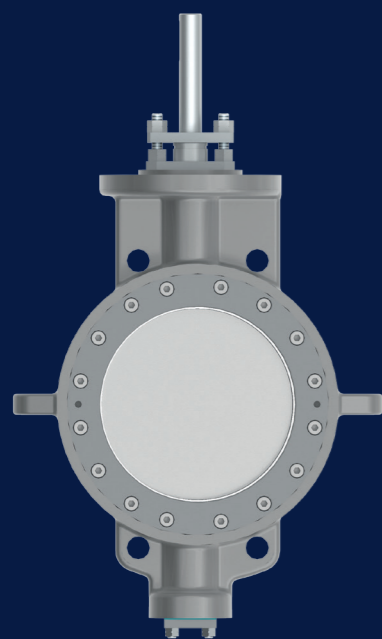
- ✔ Loading & unloading flow control
- ✔ LNG Recirculation control
- ✔ LNG Tank flow control

Urea, Ammonia and Fertilizer Production

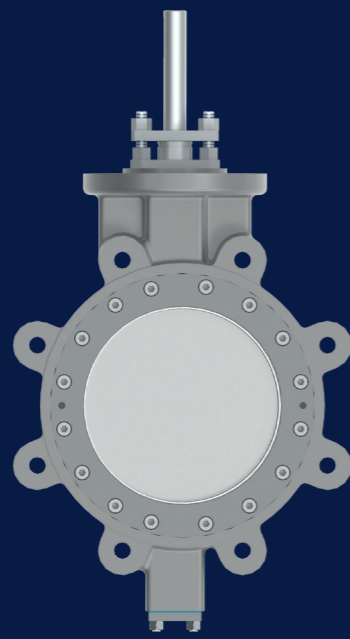
- ✔ Synthesis gas flow control
- ✔ Urea flow control
- ✔ HP steam pressure reduction

Valve body style options

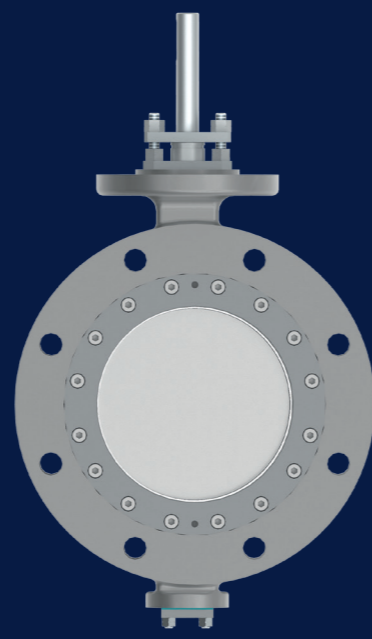
The 8500 OCT series valve is available in 3 basic body styles, Wafer, Lugged and Double Flanged (long and short pattern) special face to face and BWE options are available on request.



Wafer

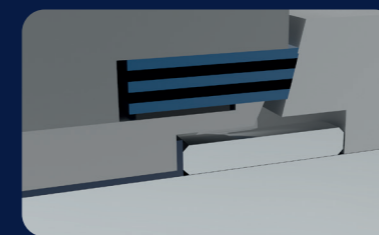


Lugged

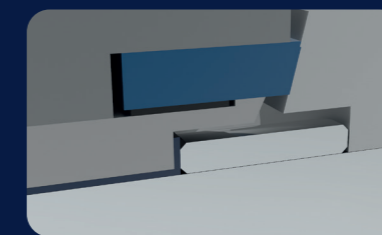


Double Flanged

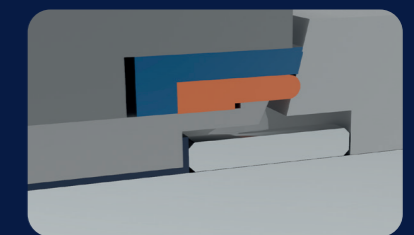
Seat options available



Laminated Seat

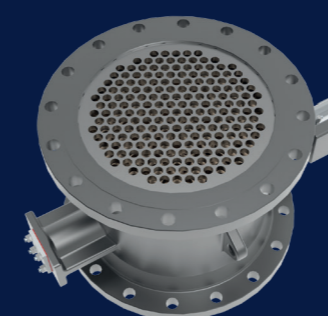


Solid Seat

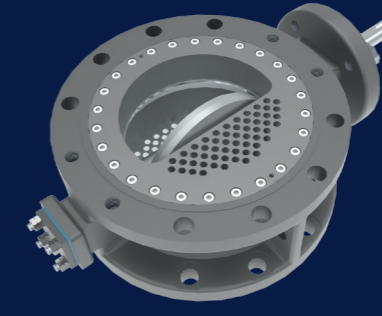


HS / SW Seat

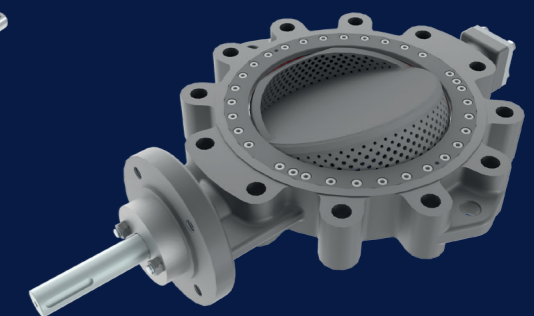
Trim options available



Full Baffle



Half Baffle



Anti-Cavitation

Flow Coefficients Cv

SIZE	TOV 150#, STANDARD TRIM	DEGREES OPEN								
		10	20	30	40	50	60	70	80	90
80mm (3")	8	14	22	36	59	95	142	199	203	
100mm (4")	16	28	44	72	116	189	281	394	401	
150mm (6")	39	69	108	177	285	462	688	964	983	
200mm (8")	74	129	202	331	533	864	1287	1803	1839	
250mm (10")	125	219	345	564	909	1473	2194	3072	3134	
300mm (12")	172	302	474	776	1250	2026	3017	4226	4310	
350mm (14")	244	428	672	1100	1772	2871	4276	5989	6109	
400mm (16")	331	579	910	1489	2400	3889	5792	8112	8275	
450mm (18")	406	711	1117	1828	2946	4774	7110	9958	10157	
500mm (20")	514	899	1413	2313	3726	6038	8993	12596	12848	
600mm (24")	786	1375	2161	3536	5698	9234	13753	19262	19647	

SIZE	TOV 150# ANTI-CAV TRIM	DEGREES OPEN								
		10	20	30	40	50	60	70	80	90
80mm (3")	5	9	14	24	38	62	92	129	132	
100mm (4")	10	18	29	47	76	123	183	256	261	
150mm (6")	26	45	70	115	185	300	447	626	639	
200mm (8")	48	84	131	215	347	562	837	1172	1195	
250mm (10")	81	143	224	367	591	957	1426	1997	2037	
300mm (12")	112	196	308	504	812	1317	1961	2747	2802	
350mm (14")	159	278	437	715	1152	1866	2780	3893	3971	
400mm (16")	215	376	592	968	1560	2528	3765	5273	5378	
450mm (18")	264	462	726	1188	1915	3103	4622	6473	6602	
500mm (20")	334	585	919	1503	2422	3925	5846	8187	8351	
600mm (24")	511	894	1405	2299	3703	6002	8939	12520	12771	

SIZE	TOV 300#, STANDARD TRIM	DEGREES OPEN								
		10	20	30	40	50	60	70	80	90
80mm (3")	8	14	22	36	58	93	139	195	199	
100mm (4")	15	27	43	70	112	182	271	379	387	
150mm (6")	37	65	102	167	269	436	650	910	928	
200mm (8")	68	119	187	306	494	800	1191	1669	1702	
250mm (10")	114	199	313	512	825	1338	1992	2790	2846	
300mm (12")	158	276	434	710	1144	1854	2762	3868	3946	
350mm (14")	203	356	559	914	1473	2387	3556	4980	5080	
400mm (16")	294	514	808	1322	2130	3452	5141	7200	7344	
450mm (18")	346	606	952	1558	2510	4067	6057	8484	8654	
500mm (20")	431	755	1186	1941	3127	5067	7547	10570	10781	
600mm (24")	606	1061	1667	2727	4394	7122	10607	14855	15152	

Flow Coefficients Cv

SIZE	TOV 300# ANTI-CAV TRIM	DEGREES OPEN								
		10	20	30	40	50	60	70	80	90
80mm (3")	5	9	14	23	37	61	90	127	129	
100mm (4")	10	18	28	45	73	118	176	247	252	
150mm (6")	24	42	66	109	175	283	422	591	603	
200mm (8")	44	77	122	199	321	520	774	1085	1106	
250mm (10")	74	129	203	333	536	869	1295	1814	1850	
300mm (12")	103	180	282	462	744	1205	1795	2514	2565	
350mm (14")	132	231	363	594	958	1552	2311	3237	3302	
400mm (16")	191	334	525	859	1384	2244	3342	4680	4774	
450mm (18")	225	394	619	1012	1631	2644	3937	5514	5625	
500mm (20")	280	491	771	1261	2032	3294	4905	6870	7008	
600mm (24")	394	689	1083	1773	2856	4629	6894	9656	9849	

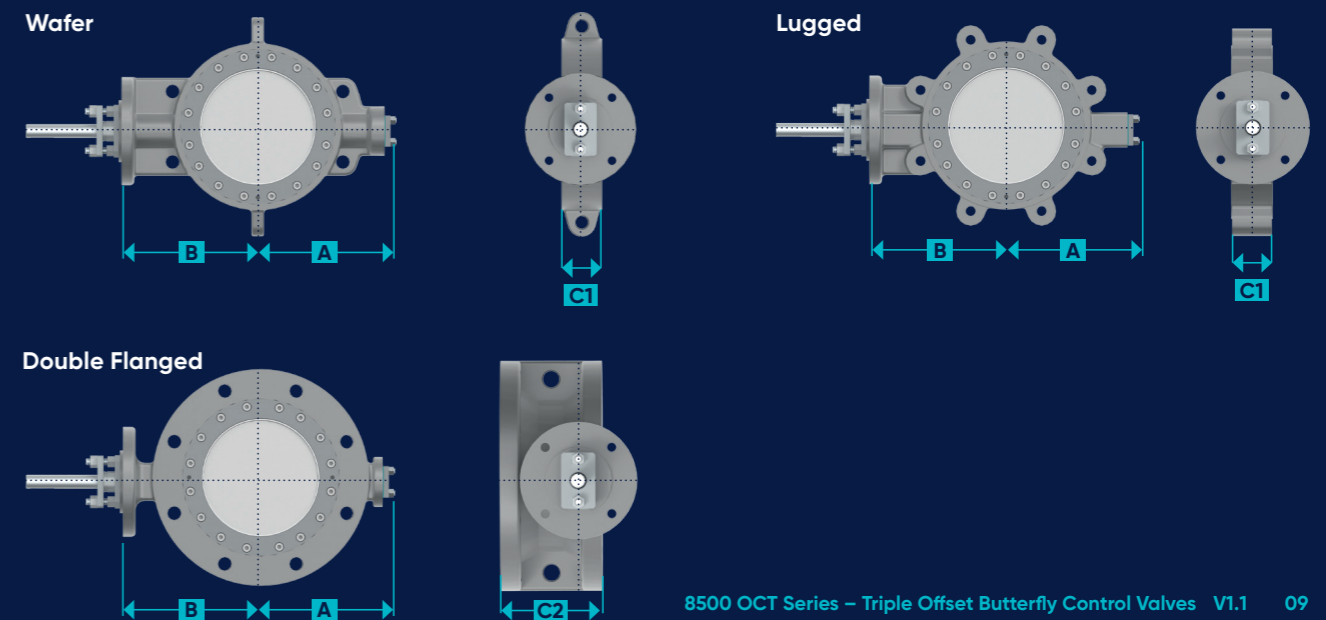
SIZE	TOV 600#, STANDARD TRIM	DEGREES OPEN								
		10	20	30	40	50	60	70	80	90
80mm (3")	8	17	30	48	74	104	135	162	165	
100mm (4")	12	24	42	67	104	148	193	230	235	
150mm (6")	33	65	118	190	294	412	536	641	654	
200mm (8")	58	118	211	340	527	738	960	1169	1192	
250mm (10")	78	156	280	452	701	982	1278	1527	1558	
300mm (12")	113	225	405	653	1013	1418	1846	2206	2251	
350mm (14")	156	312	561	905	1404	1965	2558	3057	3119	
400mm (16")	217	435	782	1260	1955	2737	3563	4258	4345	
450mm (18")	281	563	1013	1632	2532	3545	4614	5514	5627	
500mm (20")	369	739	1330	2143	3325	4654	6058	7240	7388	
600mm (24")	507	1098	1796	2894	4491	6287	8184	9980	10180	

SIZE	TOV 600# ANTI-CAV TRIM	DEGREES OPEN								
		10	20	30	40	50	60	70	80	90
80mm (3")	5	11	19	31	48	68	88	105	107	
100mm (4")	8	16	27	44	68	96	125	150	153	
150mm (6")	21	43	77	123	191	268	349	417	425	
200mm (8")	38	77	137	221	343	480	624	760	775	
250mm (10")	51	101	182	294	456	638	830	992	1013	
300mm (12")	73	146	263	424	658	922	1200	1434	1463	
350mm (14")	101	203	365	588	912	1277	1662	1987	2027	
400mm (16")	141	282	508	819	1271	1779	2316	2768	2824	
450mm (18")	183	366	658	1061	1646	2304	2999	3584	3658	
500mm (20")	240	480	864	1393	2161	3025	3938	4706	4802	
600mm (24")	330	714	1168	1881	2919	4087	5319	6487	6617	

Dimensions

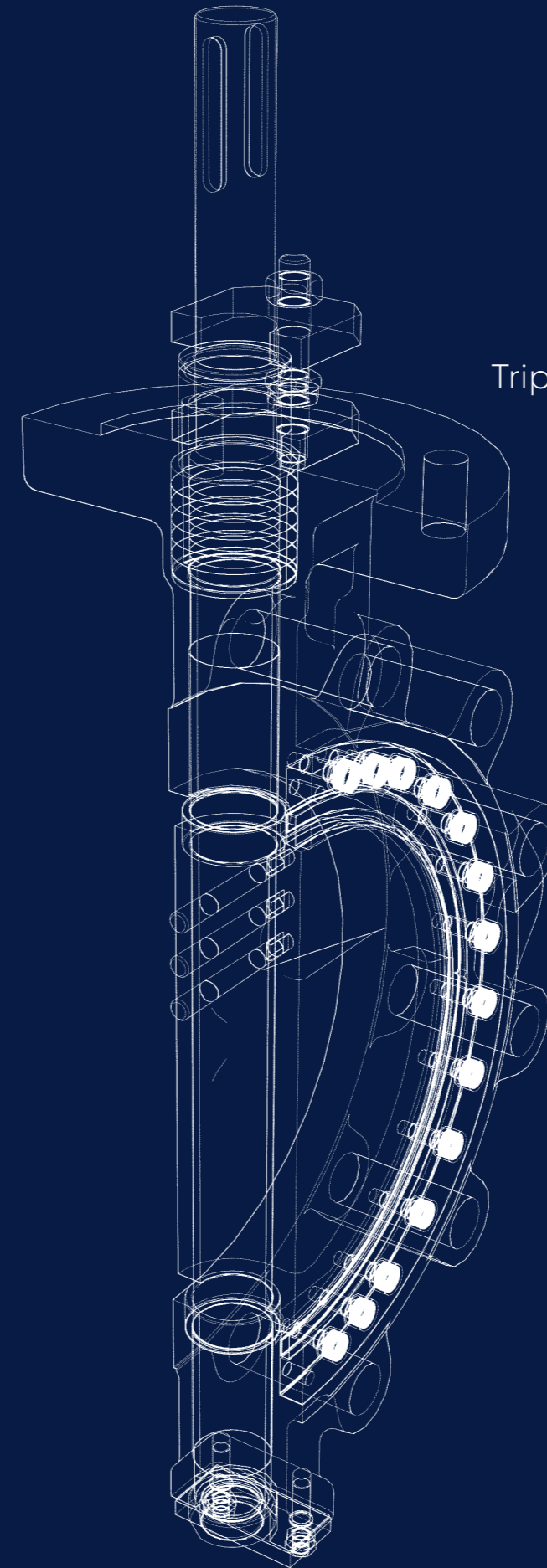
SIZE	TOV 150#	DIMENSIONS			
		A	B	C1	C2
80mm (3")	142	125	46	114	
100mm (4")	162	145	54	127	
150mm (6")	186	185	56	140	
200mm (8")	217	265	64	152	
250mm (10")	265	270	71	165	
300mm (12")	320	315	80	178	
350mm (14")	335	340	92	190	
400mm (16")	372	350	102	216	
450mm (18")	405	385	114	222	
500mm (20")	420	445	127	229	
600mm (24")	505	495	154	267	

SIZE	TOV 300#	DIMENSIONS			
		A	B	C1	C2
80mm (3")	159	145	48	114	
100mm (4")	198	190	57	127	
150mm (6")	215	215	62	140	
200mm (8")	315	245	73	152	
250mm (10")	344	285	83	165	
300mm (12")	402	340	92	178	
350mm (14")	415	365	117	190	
400mm (16")	466	395	133	216	
450mm (18")	544	435	149	222	
500mm (20")	580	480	159	229	
600mm (24")	644	535	181	267	



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



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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



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