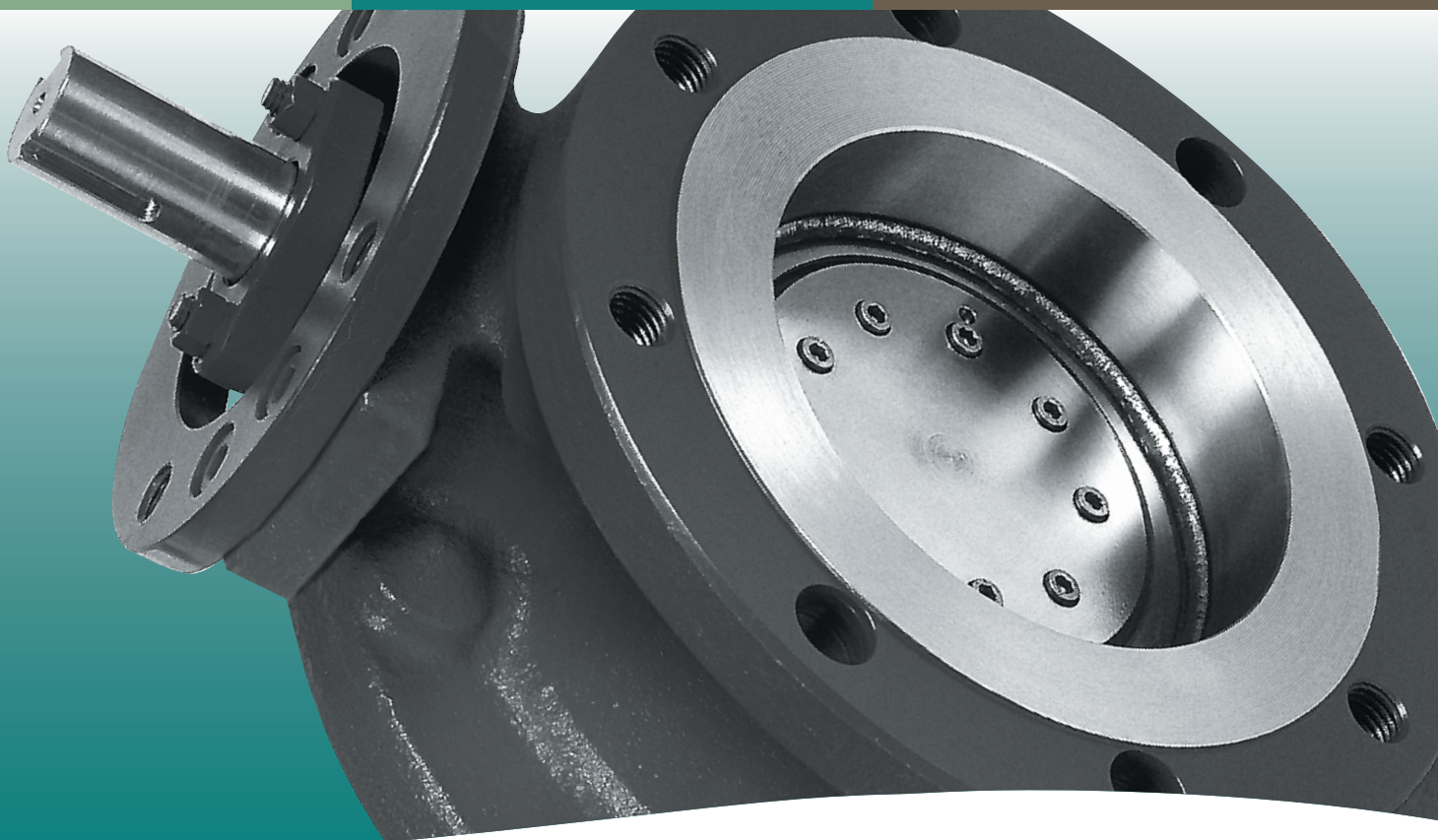


XOMOX[®]

brands you trust.



Series 9000 Triple Offset Butterfly Valves

CRANE[®]

ChemPharma Flow Solutions

www.cranepharmasolutions.com

Series 9000 Triple Offset

Value Statement

For the harsh conditions of critical process applications, steam isolation, high cycle frequency, and temperature extremes, this triple-offset metal-seated valve provides unmatched performance, reliability, and quality.

The superior design of the disc / shaft engagement and the precision machined sealing components combine with innovative design geometry to provide improved cycle life, lower operating torque, and reliable performance in extreme temperatures.

The bi-directional bubble-tight closure, even after extensive cycling, provides sealing integrity formerly associated only with soft-seated valves.

With decades of service this valve earned a reputation for proven performance in critical applications.

Xomox valves are recognized around the world for innovative leadership and customer support.

Applications

These valves are used in a broad spectrum of market sectors, including refining, chemical processing, power generation, marine, pulp and paper, petroleum production, and gas processing.

Applications include process liquids, process gases, flue gas, cryogenics, steam, condensate, petroleum products, thermal fluid, and water.

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Sizes from 3" to 24"

ANSI Class 150 300 & 600

Temp. range of -320° to 1000° F

Carbon steel, stainless,
and high alloys

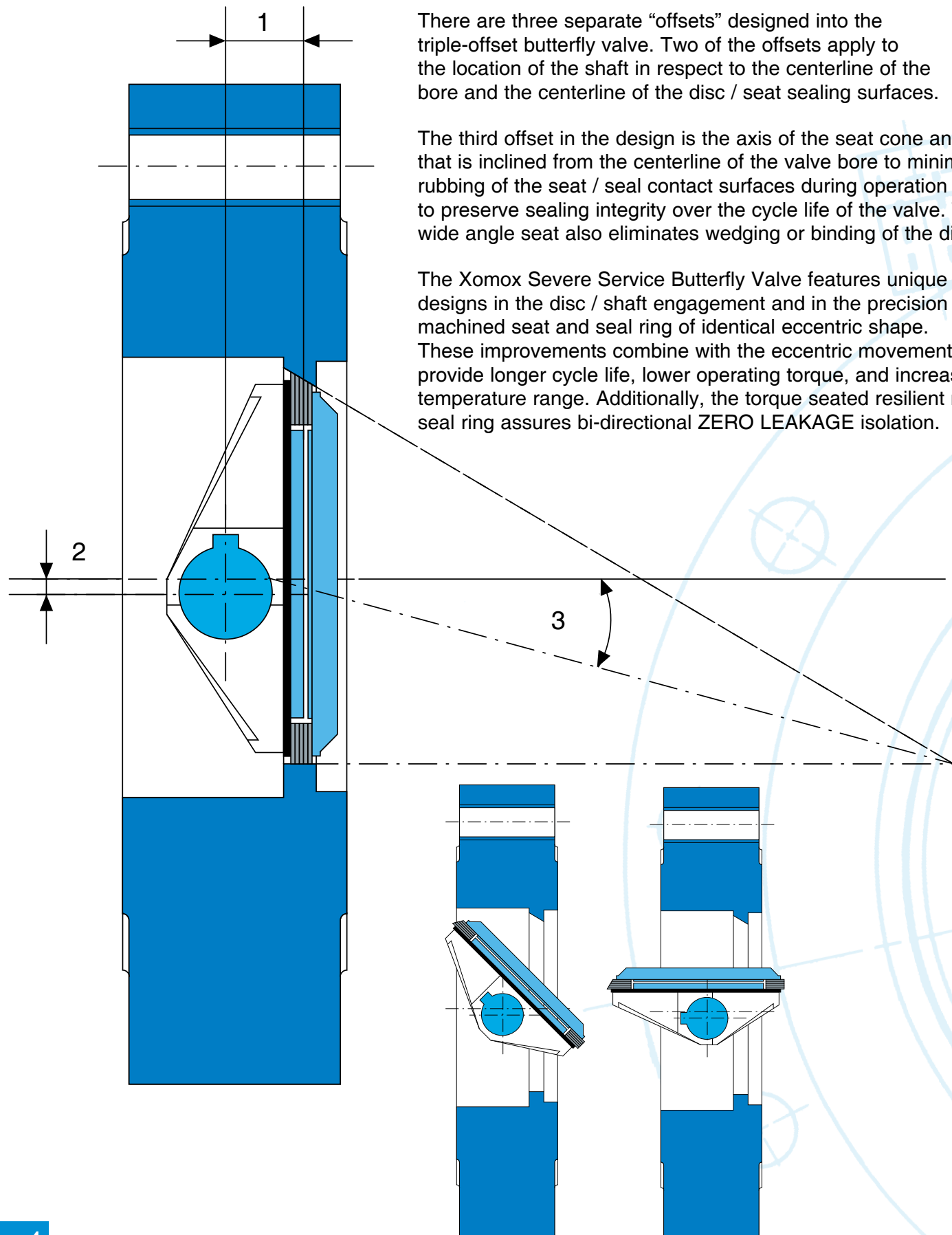
Butterfly Valves

Features and Benefits

- **Triple Offset Design**
Eliminates wear associated with sealing surface contact and maintains sealing integrity and high cycle life.
- **Wide Angle Seat Design**
Eliminates wedging and binding of the seat / disc engagement.
- **Torque Seated Resilient Metal Seal Ring**
Provides reliable zero leakage bi-directional closure to 1000°F.
 - **Bubble-Tight Closure**
Provides process efficiency with reduced cost of maintenance.
 - **Formidable Shaft Support System** ... Minimizes disc deflection and provides bi-directional bubble-tight closure.
 - **Self-Centering Disc Design** ... Incorporates a keyed disc/shaft connection instead of a pinned connection. This accommodates thermal extremes without binding
 - **Robust Single-Piece Shaft**
Minimizes shaft deflection and permits bi-directional sealing
 - **Optional Stellite Seat** ... Offers optimum resistance to erosion in abrasive and high velocity applications.
 - **No Plastics or Elastomers**
Provides fire-safe system security at extreme temperatures
 - **Bearing Protector Seal Rings**
Prevent solid particles from coming in contact with bearing surfaces
 - **Blowout-Proof Shaft**
Complies with API 609 to improve safety for operating personnel
 - **API 609 Lug Body Dimensions**
Interchangeable with most double-offset high performance valves
 - **Optional ASME B16.10 Flanged**
Interchangeable with Gate valve and Ball valve lay lengths
 - **Quarter Turn Design**
Reduces emissions and improves containment integrity
 - **90° Low Torque Actuation**
Enables simplified, cost-effective automation
 - **Fire Tested** ... Meets API 607 Ed. 4



Triple-Offset Design



There are three separate “offsets” designed into the triple-offset butterfly valve. Two of the offsets apply to the location of the shaft in respect to the centerline of the bore and the centerline of the disc / seat sealing surfaces.

The third offset in the design is the axis of the seat cone angle that is inclined from the centerline of the valve bore to minimize rubbing of the seat / seal contact surfaces during operation and to preserve sealing integrity over the cycle life of the valve. This wide angle seat also eliminates wedging or binding of the disc.

The Xomox Severe Service Butterfly Valve features unique designs in the disc / shaft engagement and in the precision machined seat and seal ring of identical eccentric shape. These improvements combine with the eccentric movement to provide longer cycle life, lower operating torque, and increased temperature range. Additionally, the torque seated resilient metal seal ring assures bi-directional ZERO LEAKAGE isolation.

Cost of Ownership



- Valve Price
- Freight
- Size/Weight
- Installation



- Torque
- Automation
- Cycle Life
- Maintainability



- Zero Leakage
- Containment
- Firesafe
- Retrofit

In addition to purchase price, the true cost of ownership for any valve is determined by a variety of other considerations. Before buying any valve, the following factors must also be weighed.

Size and weight of the valve determine not only the freight cost but also the size of skid, the extent of piping supports, and the installation cost related to both handling equipment and number of personnel required.

Lower operating torque permits the use of smaller gear operators or actuators. Quarter turn actuation is more versatile and more economical and has space saving benefits as well.

Triple-offset valves are known for high cycle life, unmatched by any other metal seated valve design, and for diminished cost of maintenance.

Maintenance is often a hidden cost of ownership. High maintenance costs over the life of the valve can turn an inexpensive valve into an expensive one. These valves are easy

and inexpensive to maintain. The stainless / graphite seal ring can be replaced simply by removing the seal retainer on the disc. Complete disassembly of the valve is not necessary.

Zero leakage closure eliminates the costly loss of product and the risk of loss due to cross contamination.

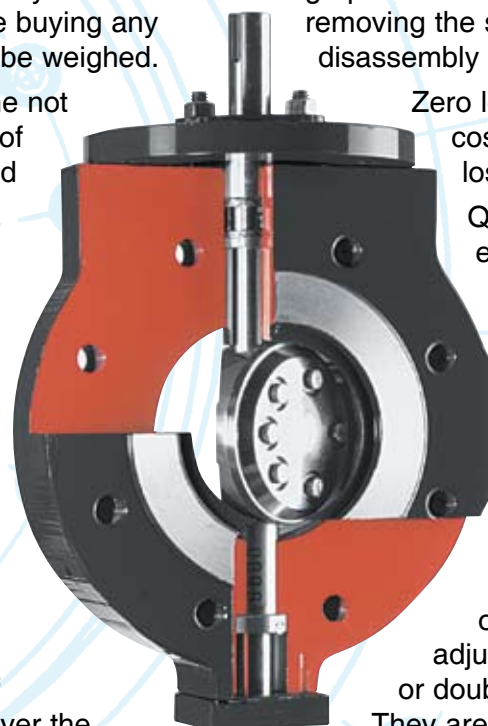
Quarter turn valves provide more effective gland sealing, minimizing the risk of costly EPA violations.

Unibody construction eliminates concern for body joint leakage.

These valves are firesafe, eliminating the need for dual, application specific inventories.

Retrofitting systems is also simplified with the versatility of these valves. The three lay length options eliminate the cost of piping adjustments when replacing gate, ball, or double-offset butterfly valves.

They are manufactured to API 609, ASME B16.10, and ISO 5752 standards.



Versatility

Versatility is a standard feature of these valves. They provide reliable operation in a variety of pressure and temperature requirements and in critical applications like flue gas and cryogenics. The versatility extends to three options for lay length dimensions which gives you both cost savings and greater flexibility in piping design and retrofit.

- Lug pattern bodies designed to API 609 are economical and are interchangeable with most high performance double-offset and triple-offset rotary valves.
- Flanged short pattern bodies designed to ISO 5752 offer the most common lay length for triple-offset rotary valves.

- Flanged long pattern bodies designed to ASME B16.10 simplify replacement of gate valves and ball valves with interchangeable dimensions.

Disc position is indicated by an integral marking of the shaft in alignment with a permanent reference mark on the valve body. This enables quick and easy retrofitting of actuators without removing the valve from the line and without risking an incorrect orientation or operating mode.

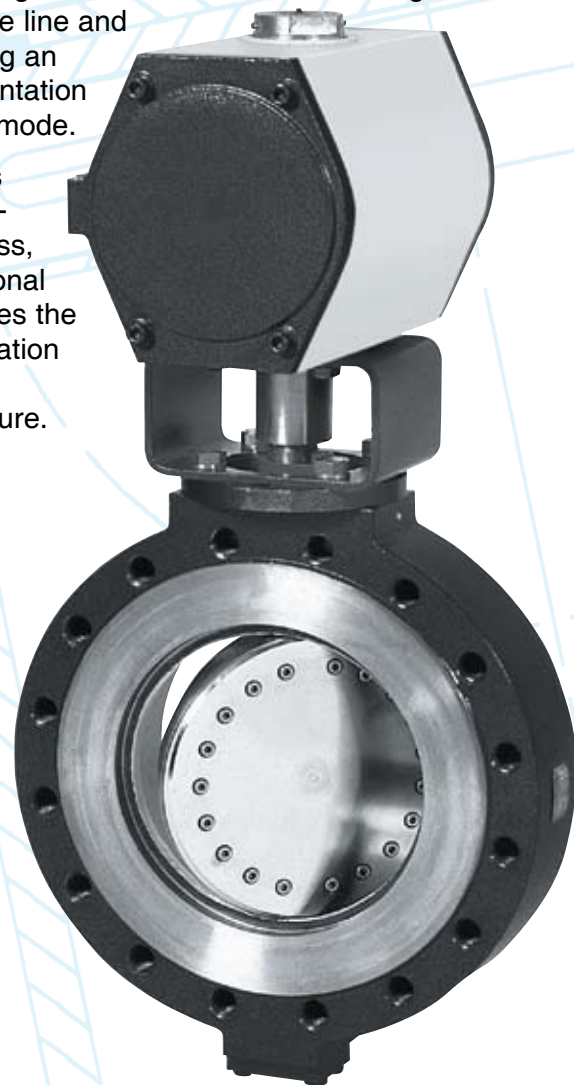
These valves have bi-directional tightness, and a directional arrow indicates the proper orientation for pressure assisted closure.



Double Flange
Long Pattern

ASME B16.10
Tables 1 & 2 (Gate)
4" to 12"
150/300 Class

Other sizes, classes on request.



Lug
Pattern

API 609
Table 2
3" to 24"
150/300 Class
3" to 16"
600 Class

Other sizes, classes on request.

Standards

These valves are designed and manufactured in compliance with ASME, API and ISO Standards under Quality Assurance provisions of ISO 9001 and in compliance with PED requirements.



Double Flange
Short Pattern

ISO 5752
Table 4 Short
3" to 24"
150/300 Class

Other sizes, classes on request.

Design: ASME B16.34
ASME Section VIII
ASME B31.3
API 609

Face to Face
Dimensions: ASME B16.10
ISO 5752
API 609

Flange Dimensions: ASME B16.5
ASME B16.47

Testing: API 598 (Soft Seat)
API 6D (Soft Seat)
FCI 70-2 Class VI

Fire Testing: API 607 Ed 4

Marking: MSS SP-25

Quality Assurance: ISO 9001
PED



Cv Values - Class 150 & 300

Valve Size		Opening Angle							
inches	mm	90°	80°	70°	60°	50°	40°	30°	20°
3	80	120	116	95	70	52	37	25	14
4	100	230	223	182	133	99	71	48	28
5	125	400	388	316	232	172	124	84	48
6	150	660	640	521	383	284	205	139	79
8	200	1,500	1,455	1,185	870	645	465	315	180
10	250	2,400	2,328	1,896	1,392	1,032	744	504	288
12	300	3,600	3,492	2,844	2,088	1,548	1,116	756	432
14	350	5,500	5,335	4,345	3,190	2,365	1,705	1,155	660
16	400	7,600	7,372	6,004	4,408	3,268	2,356	1,596	912
18	450	10,300	9,991	8,137	5,974	4,429	3,193	2,163	1,236
20	500	13,000	12,480	10,010	7,540	5,590	4,030	2,730	1,560
24	600	20,200	19,594	15,958	11,716	8,686	6,262	4,242	2,424

Consult factory
for Class 600
Cv values.

Pressure/Temperature Rating

Temperature °F	Working Pressure psig									
	Class 150				Class 300				Class 600	
	A216 WCB	A516 Gr.60	A351 CF8M	A240 Type 321	A216 WCB	A516 Gr.60	A351 CF8M	A240 Type 321	A216 WCB	A516 Gr.60
-20 to 100	285	235	275	275	740	620	720	720	1,480	1,235
200	260	215	240	235	675	560	620	610	1,350	1,125
300	230	210	215	210	655	550	560	545	1,315	1,095
400	200	200	195	190	635	530	515	495	1,270	1,060
500	170	170	170	170	600	500	480	460	1,200	995
600	140	140	140	140	550	455	450	435	1,095	915
650	125	125	125	125	535	450	445	430	1,075	895
700	110	110	110	110	535	450	430	420	1,065	895
750	95	95	95	95	505	445	425	415	1,010	885
800	80	80	80	80	410	370	415	415	---	---
850	---	---	65	65	---	---	405	410	---	---
900	---	---	50	50	---	---	395	405	---	---
950	---	---	35	35	---	---	385	385	---	---
1000	---	---	20	20	---	---	365	355	---	---

Subject to change without notice.

Actuator Sizing Torque Values - Class 150 & 300 (in. lbs.)

Valve Size		Maximum Working Pressure						
inches	mm	100	200	300	400	500	600	700
3	80	300	504	708	900	1,104	1,308	1,512
4	100	540	900	1,248	1,596	1,944	2,292	2,640
5	125	924	1,464	2,016	2,556	3,108	3,648	4,200
6	150	1,668	2,988	3,984	4,992	6,000	6,996	8,004
8	200	1,776	3,540	5,316	7,080	8,856	10,632	12,396
10	250	3,120	5,784	8,460	11,136	13,800	16,476	19,152
12	300	5,616	8,784	11,964	15,144	18,312	21,492	24,672
14	350	8,952	14,364	19,776	25,176	30,588	36,000	41,412
16	400	9,264	17,208	25,152	33,084	41,028	48,972	56,904
18	450	12,840	21,696	30,552	39,408	48,264	57,120	65,976
20	500	18,084	29,076	40,068	51,060	62,052	73,044	84,036
24	600	31,632	49,104	66,576	84,036	101,508	118,980	136,440

The torques shown above are actuator sizing torques. They include a safety factor and can be used for all applications irrespective of whether the flow is in the preferred direction (from shaft side) or reverse direction.

Actuator Sizing Torque Values - Class 600 (in. lbs.)

Valve Size		Maximum Differential Pressure (ΔP in psi in Closed-Position)			
inches	mm	725	900	1,100	1,450
3	80	2,037	2,567	3,055	4,074
4	100	3,693	4,653	5,539	7,385
6	150	7,445	9,381	11,168	14,891
8	200	11,008	13,870	16,512	22,016
10	250	18,941	23,866	28,412	37,882
12	300	22,109	27,857	33,164	44,218
14	350	28,646	36,094	42,969	57,292
16	400	28,626	38,589	45,940	61,253

Note: The torque values shown above are actuator sizing torques. They include a safety factor and can be used for all applications, whether the flow or high pressure is acting in the preferred flow direction (from shaft side) or reverse direction (from disc side). The torque value for 100 psi differential pressure is to be taken as the minimum torque.

Consult factory for actuator sizing torque values for valves in cryogenic services.

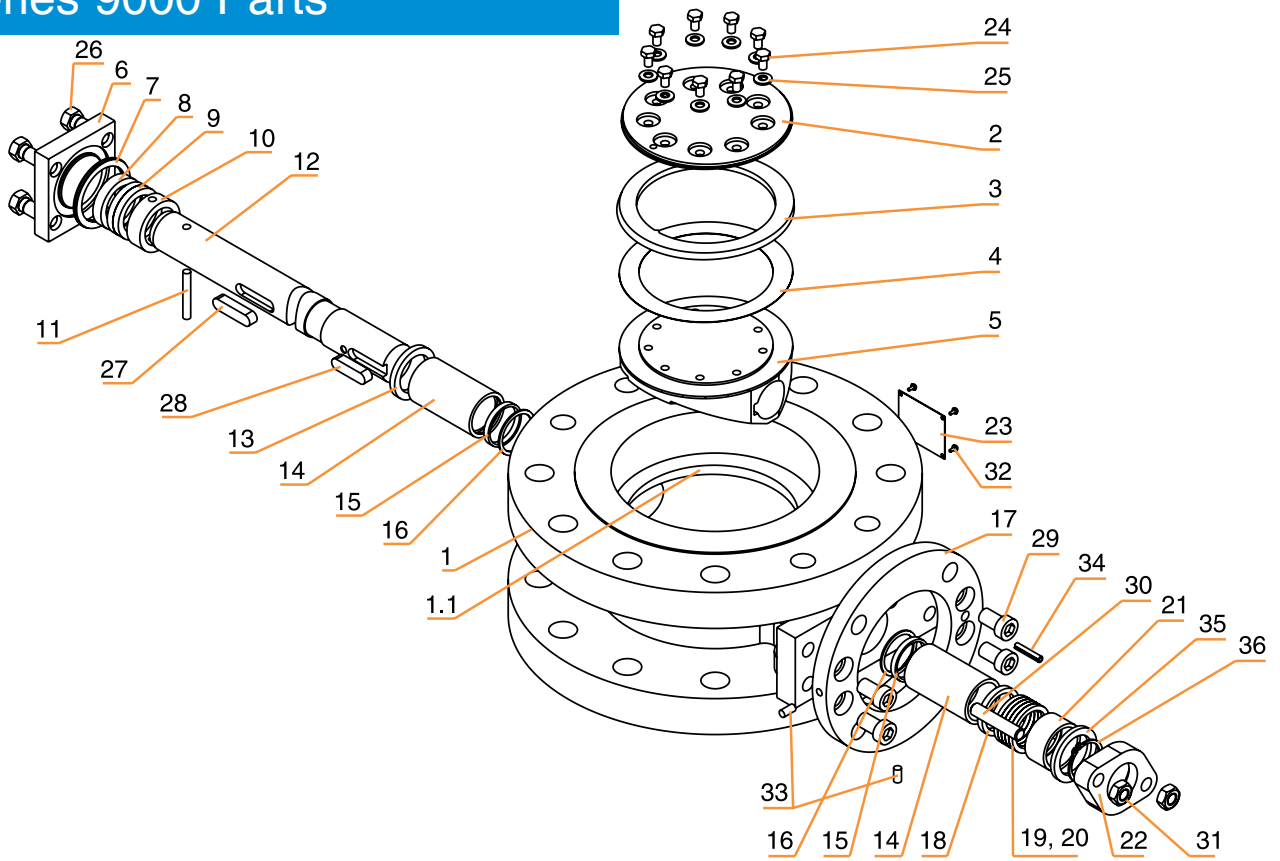
Series 9000 - Parts & Materials List

Item	Temperature Range	Carbon Steel Construction †		Stainless Steel Construction †		
		-20°F to +752°F (-29°C to +400°C)	-20°F to +572°F (-29°C to +300°C)	-20°F to +752°F (-29°C to +400°C)	-60°F to +572°F (-51°C to +300°C)	-76°F to +1,022°F (-60°C to +550°C)
		Model Number Part Description	-CBCBST62HS1 Standard	-CBCBSF62HS1 Nace	-SCSCST62HR1 Basic	-SCSCSF62HR1 Nace (Standard)
1	Body*	A216 Gr.WCB or A516 Gr.60CS		A351 Gr. CF-8M or A240 Type 321 SS		
1.1	Body Seat*	A240 Type 316Ti SS or equivalent (Stellite #21 on request)		A351 Gr. CF-8M or A240 Type 321 SS (Stellite #21 on request)		
2	Seal Retainer Ring*	A516 Gr. 60 CS / ENP ‡		A240 Type 321 SS or equivalent		
3	Laminated Seal	A240 Type 321 SS / Graphite		A240 Type 321 SS / Graphite		
4	Seal Gasket	Graphite		Graphite		
5	Disc*	A216 Gr. WCB / ENP ‡		A351 Gr. CF-8M		
6	Cover	A516 Gr. 60 CS		A240 Type 321 SS		
7	Cover Gasket	Graphite		Graphite		
8	Intermediate Ring	303 SS		303 SS		
9	Ring	Graphite		Graphite		
10	Shaft Retainer	303 SS Hard Chrome Plated		303 SS Hard Chrome Plated		
11	Pin	316Ti SS or equivalent		316Ti SS or equivalent		
12	Shaft	431 SS	S31803 SS	431 SS	S31803 SS	660 SS
13	Thrust Ring*	440B SS or 5925 SS (Hardened)		440B SS or 5925 SS (Hardened)		
14	Bearing	303 SS ENP ‡		303 SS / ENP ‡		
15	Bearing Protector	Carbon Fiber Mesh		Carbon Fiber Mesh		
16	Anti-seize Ring	- - -		440B SS or 5925 SS (Hardened)		
17	Mounting Plate	Carbon Steel		Carbon Steel / ENP ‡		
18	Packing Ring	303 SS		303 SS		
19	Anti-extrusion Ring	Carbon Fiber Mesh		Carbon Fiber Mesh		
20	Gland Packing	Graphite		Graphite		
21	Gland	303 SS		303 SS		
22	Gland Flange	A516 Gr. 60		A240 Type 321		
23	Name Plate	Stainless Steel		Stainless Steel		
24	Retainer Screw	A193 Gr. B8 or B8M		A193 Gr. B8 or B8M		A638 Gr. 660 SS
25	Spring Washer*	5925 SS	Inconel 718	5925 SS	Inconel 718	
26	Cover Screw	A193 Gr. B8 or B8M		A193 Gr. B8 or B8M		A638 Gr. 660 SS
27	Disc Key	316Ti SS		316Ti SS		
28	Drive Key	316Ti SS		316Ti SS		
29	Mounting Plate Screw	A193 Gr. B8 or B8M		A2-70 Stainless Steel		A638 Gr. 660 SS
30	Gland Stud	A193 Gr. B8 or B8M		A193 Gr. B8 or B8M		A638 Gr. 660 SS
31	Gland Nut	A194 Gr. 8A or 8MA		A194 Gr. 8A or 8MA		A638 Gr. 660 SS
32	Drive Screw	Stainless Steel		Stainless Steel		
33	Groove Pin	Carbon Steel Zinc Plated		Carbon Steel Zinc Plated		
34	Spring Pin	Carbon Steel Zinc Plated		Carbon Steel Zinc Plated		
35	BOP Ring	303 SS or equivalent		303 SS or equivalent		
36	Retaining Ring	Stainless Steel		Stainless Steel		

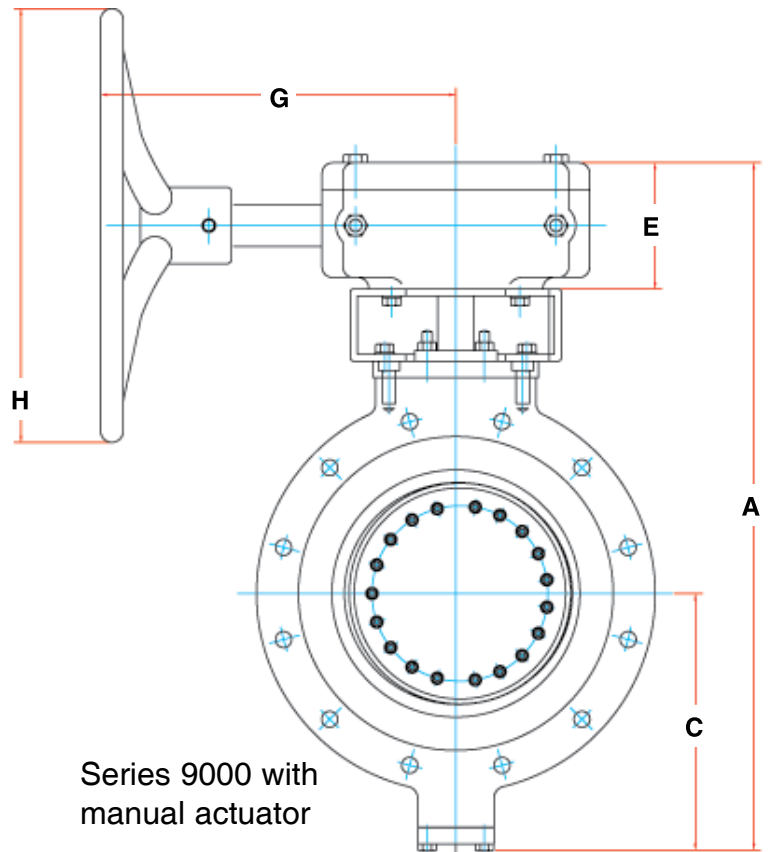
* Material according to the manufacturer's choice. ‡ ENP = Electroless Nickel Plated.

† The application (medium and temperature) must be specified when ordering.

Series 9000 Parts



Series 9000 Dimensions



Series 9000 with manual actuator

ASME/ANSI Class 150 & 300 Other Dimensions*, Inches (mm)					
Size	A	C	E	G	H
3" (80)	15.5 (394)	5.1 (130)	4.0 (102)	9.5 (241)	12.0 (305)
4" (100)	16.5 (419)	5.7 (145)	4.0 (102)	9.5 (241)	12.0 (305)
6" (150)	18.8 (478)	7.1 (180)	4.0 (102)	9.5 (241)	12.0 (305)
8" (200)	25.5 (648)	8.2 (208)	4.0 (102)	12.0 (305)	18.0 (457)
10" (250)	29.5 (749)	9.5 (241)	4.0 (102)	13.0 (330)	18 (457)
12" (300)	32.5 (826)	11.5 (292)	5.0 (127)	13.0 (330)	18.0 (457)
14" (350)	35.5 (902)	12.5 (318)	5.0 (127)	13.5 (343)	18.0 (457)
16" (400)	43.0 (1092)	15.2 (386)	7.5 (191)	13.5 (343)	24.0 (610)
18" (450)	48.0 (1219)	17.2 (437)	7.5 (191)	18.0 (457)	24.0 (610)
20" (500)	56.0 (1422)	18.5 (470)	7.5 (191)	18.0 (533)	24.0 (610)
24" (600)	59.0 (1499)	21.2 (538)	7.5 (191)	21.0 (533)	30.0 (762)

End-To-End Dimensions, Inches (mm) ASME/ANSI Class 150, 300, & 600							
Valve Size	Lug API 609 CL 150	Lug API 609 CL 300	Lug API 609 CL 600	Flanged ISO 5752 CL 150	Flanged ISO 5752 CL 300	Flanged B16.10 CL 150	Flanged B16.10 CL 300
3" (80)	1.88 (48)	1.88 (48)	2.12 (54)	4.5 (114)	4.5 (114)	8.0 (203)	11.12 (282)
4" (100)	2.12 (54)	2.12 (54)	2.50 (64)	5.0 (127)	5.0 (127)	9.0 (229)	12.0 (305)
6" (150)	2.25 (57)	2.31 (59)	3.06 (78)	5.5 (1.40)	5.5 (140)	10.5 (267)	15.88 (403)
8" (200)	2.50 (64)	2.88 (73)	4.00 (102)	6.0 (152)	6.0 (152)	11.5 (292)	16.5 (419)
10" (250)	2.81 (71)	3.25 (82)	4.62 (117)	6.5 (165)	6.5 (165)	13.0 (330)	18.0 (457)
12" (300)	3.19 (81)	3.62 (92)	5.50 (140)	7.0 (178)	7.0 (178)	14.0 (356)	19.75 (502)
14" (350)	3.62 (92)	4.62 (117)	6.12 (155)	7.5 (191)	7.5 (191)	15.0 (381)	30.0 (762)
16" (400)	4.00 (102)	5.25 (133)	7.00 (178)	8.5 (216)	8.5 (216)	16.0 (406)	33.0 (838)
18" (450)	4.50 (114)	5.88 (150)	---	8.75 (225)	8.75 (225)	17.0 (432)	36.0 (914)
20" (500)	5 (127)	6.25 (159)	---	9.0 (229)	9.0 (229)	18.0 (457)	39.0 (991)
24" (600)	6.06 (154)	7.12 (181)	---	10.5 (267)	10.5 (267)	20.0 (508)	45.0 (1143)

ASME/ANSI Class 600 Other Dimensions* Inches (mm)					
Size	A	C	E	G	H
3" (80)	16.2 (410)	6.0 (153)	3.0 (76)	9.5 (240)	10.0 (254)
4" (100)	18.8 (478)	7.0 (178)	3.2 (80)	11.1 (282)	16.0 (406)
6" (150)	23.5 (597)	8.6 (218)	4.2 (106)	14.3 (362)	24.0 (610)
8" (200)	26.4 (670)	10.4 (265)	4.2 (106)	14.3 (362)	24.0 (610)
10" (250)	33.2 (842)	12.7 (322)	5.0 (127)	15.3 (387)	24.0 (610)
12" (300)	36.6 (930)	13.8 (349)	5.9 (150)	20.0 (509)	24.0 (610)
14" (350)	44.0 (1118)	15.7 (400)	5.9 (150)	20.0 (509)	24.0 (610)
16" (400)	46.7 (1187)	17.1 (434)	5.9 (150)	20.0 (509)	24.0 (610)

Weights*, ASME/ANSI Class 150,300, & 600 - Pounds (kg)							
Valve Size	Lug API 609 CL 150	Lug API 609 CL 300	Lug API 609 CL 600	Flanged ISO 5752 CL 150	Flanged ISO 5752 CL 300	Flanged B16.10 CL 150	Flanged B16.10 CL 300
3" (80)	55 (25)	55 (25)	TBA (TBA)	62 (28)	71 (32)	69 (31)	78 (35)
4" (100)	66 (30)	66 (30)	TBA (TBA)	71 (32)	90 (41)	77 (35)	97 (44)
6" (150)	86 (39)	88 (40)	TBA (TBA)	103 (47)	141 (64)	124 (56)	176 (80)
8" (200)	151 (69)	166 (75)	TBA (TBA)	183 (83)	238 (108)	219 (99)	300 (136)
10" (250)	200 (91)	223 (101)	TBA (TBA)	276 (125)	348 (158)	270 (123)	442 (201)
12" (300)	238 (108)	302 (137)	TBA (TBA)	331 (150)	443 (201)	380 (173)	550 (250)
14" (350)	289 (131)	360 (164)	TBA (TBA)	427 (194)	592 (269)	530 (241)	960 (436)
16" (400)	411 (187)	529 (240)	TBA (TBA)	651 (296)	851 (387)	660 (300)	1240 (564)
18" (450)	680 (309)	877 (399)	---	760 (345)	1057 (480)	880 (405)	1575 (716)
20" (500)	863 (392)	1072 (487)	---	887 (403)	1211 (550)	1080 (491)	1980 (900)
24" (600)	1380 (626)	TBA (TBA)	---	1296 (588)	TBA (TBA)	1690 (768)	TBA (TBA)

*Subject to change without notice.
Other sizes and classes on request.

How To Specify

Example:

6" 9 1 0 1 A - CBCBST62HT1 - G A

1 2 3 4 5 6

7 through 12

13 14

The example above, **6" 9101A-CBCBST62HT1-GA . . .**

indicates a 6-inch – Xomox Series 9000 Severe Service Butterfly Valve – ANSI Lug – API 609 Body Style – ANSI Class 150 – Raised Face – A216 WCB Carbon Steel Body, Nickel Plated WCB Carbon Steel Disc, 431 Stainless Steel Shaft (Hard Chrome Plated 316 Stainless Steel Bearings, Graphite Gland Packing) Stellite 21 Hard Body Seat, Laminated Type 321 Stainless Steel and Graphite Disc Seal – Manual Gear Operator – Standard Service

1	Nominal Size	Code
	3"	3"
	4"	4"
	6"	6"
	8"	8"
	10"	10"
	12"	12"
	14"	14"
	16"	16"
18"	18"	
20"	20"	
24"	24"	

7 - 12	Body	Disc	Shaft	Body Seat / Disc Seal	Code
	WCB	WCB †	431 SS	316Ti SS / 321SS with Graphite	CBCBST62HS1
	WCB	WCB †	431 SS	Stellite 21 / 321 SS with Graphite	CBCBST62HT1
	CF8M	CF8M	S31803 SS	316SS / 321SS with Graphite	SCSCSF62HR1
	CF8M	CF8M	S31803 SS	Stellite 21 / 321 SS with Graphite	SCSCSF62HT1
	CF8M	CF8M	660 SS	316SS / 321SS with Graphite	SCSCSU62HR1
	CF8M	CF8M	660 SS	Stellite 21 / 321 SS with Graphite	SCSCSU62HT1

2	Valve Series	Code
	Xomox Series 9000 Severe Service Butterfly Valve	9

3	Body Style	Code
	ANSI Lug Style	1
	ANSI Double Flanged Pattern	3

4	End-To-End Standard	Code
	API 609 - Category B / MSS SP-68	0
	ASME / ANSI B16.10, Tables 1 & 2 Double Flanged, Long Pattern*	2
	ISO 5752, Table 4, Double Flanged, Short Pattern	6

5	Nominal Pressure	Code
	ASME / ANSI Class 150	1
	ASME / ANSI Class 300	3
	ASME / ANSI Class 600	6

6	Flange Sealing Face	Code
	Raised Face per ASME/ANSI B16.5	A

13	Operation	Code
	Valve + Flange Mounting Plate for Actuator = Standard	X
	Manual Gear Operator	G
	Manual Gear Operator with Chainwheel	C
	Manual Gear Operator with Locking Device	L
	Xomox Pneumatic Actuator, DA (Specify)	D
	Xomox Pneumatic Actuator, SR-Closed (Specify)	S
	Xomox Pneumatic Actuator, SR-Open (Specify)	A
	Electric Actuator (Specify)	E
Other (Specify)	Z	

14	Service Requirements	Code
	Standard (Meets API 598 and API 607 requirements)	A
	Valve supplied with body and disc certification (CMTR's)	B
	Valve for Cryogenic Service	C
	Materials of construction per NACE MR 01-75	N
	Valve cleaned and bagged for Oxygen Service	O
	Valve supplied with PED certificate	P
	Valve for Steam Service	S
	Valve cleaned and bagged for Vacuum Service	V
	Other (Specify)	Z

* ASME / ANSI B16.10, Table 1/8 (Class 150), 2/10 (Class 300), and 4/5 (Class 600) dimensions for long pattern gate valves are equivalent to API 609-Category B, Double Flanged, Long Pattern valve end-to-end dimensions.

† Nickel plated (NP) carbon steel disc.

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