

Max-Seal in the fluid world.



BEST HIGH PERFORMANCE in The Butterfly Valve Industry

Control / Double Offset / Triple Offset / Butt-weld Jacket / High-temperature / Cryogenic

Max-Seal

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Version: V100L200L-20211216



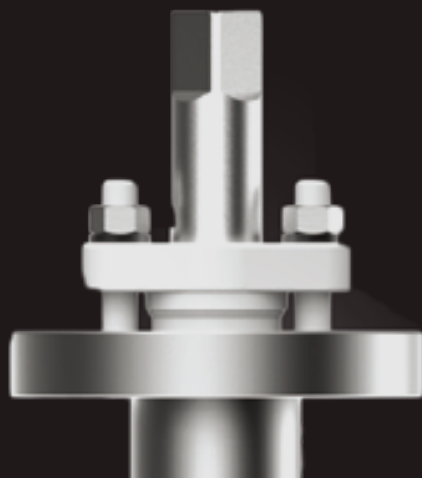
BEST HIGH PERFORMANCE



MAX-SEAL V TYPE
100L / 200L Series
Class 150 Class 300

Low Temperature and Cryogenic Butterfly Valve

www.maxsealinc.com



V TYPE 100L/200L Series Low Temperature and Cryogenic Butterfly Valve

Type : Wafer, Lug, Flanged

Size : DN50~DN900

2" - 36"

Pressure Rating : Class 150, Class 300,
PN10, PN16, PN20, PN25, PN40, PN50, JIS10K, JIS16K,
JIS20K, JIS30K, JIS40K

Temperature Rating : -320°F to 250°F
-196°C to 121°C

Patented Floating Seat Retainer

Bi-directional Zero Leakage

Low Fugitive Emission System

Cryogenic Design

General Applications



Chemistry



Oil Refinery



Energy LNG



Petrochemical

SPECIFICATIONS

Testing : API 598, ISO 5208

Leakage : Soft seat Bi-directional Bubble Tight

Valve Design : ASME B16.34, MSS-SP-68

Anti-Blow-Out Stem : API 609

Face-to-Face : API 609, MSS-SP-68, ISO 5752

Cryogenic : BS 6364, ISO 28921

Low Fugitive Emission

Gland Packing System : DIN3780, MSS-SP-143

Marking : MSS-SP-25, API 609 Top

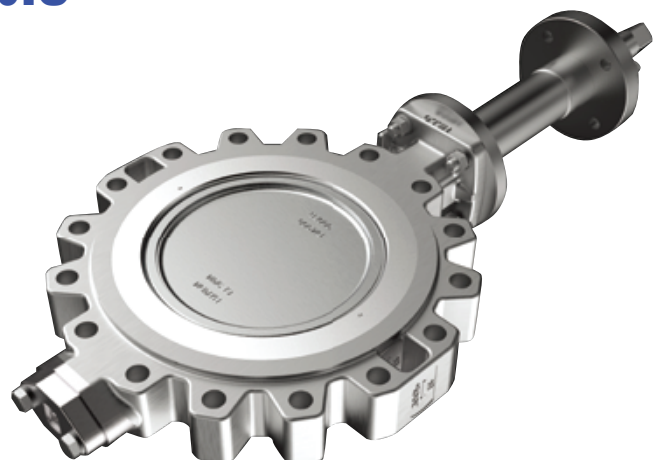
Mounting : ISO 5211 Suitable

Flange :

ANSI : 150LB, 300LB,

DIN : PN10, 16, 20, 25, 40, 50

JIS : 10K, 16K, 20K, 30K, 40K



FEATURES

Gland Flange

A fully adjustable two-piece gland flange to make sure an even packing load over 360 °.

Gland Bush

Standing alone with Gland Flange, preventing uneven down-pressure on gland packing.

Gland Packing

PTFE or same as Valve Seat. Performance is compliance with API 598's testing pressure.

Self-Lubricant Bush

Woven Fabric Metal material used to lower down stem's friction factor.

Patented Retainer Ring

A no-screw-floating design to eliminate cold flow. This design provides positive tight shut-off of the seat. Surface roughness is 125-200AARH.

Valve Seat

Bi-directional zero leakage design. PTFE is used.

Taper Pin

Tangentially positioned half in the disc and half in the stem to eliminate the potential of failure.

Thrust Ring

SS316L material is used, Positioned in the bottom of the stem for preventing incorrect stem shift.

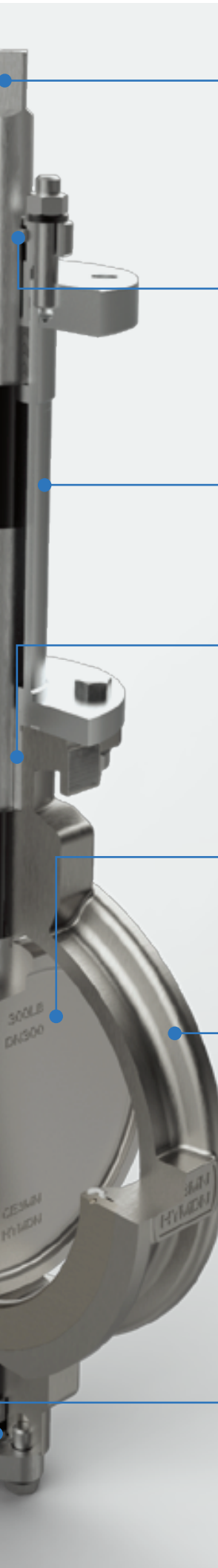
Bottom Cover

Rigid SS316L material is used to prevent abnormal leakage.

Bottom Gasket

PTFE or GRAPHITE material





Valve Stem

Stainless steel with hard chrome plating is used. A strong and rigid one piece stem design, which largely increases the overall strength. Stem and corresponding components sizes are all compliant with ISO 5211. Stem material and disc position are marked on the top of stem.

Anti-Blow-Out Stem

Protecting stem blow-out caused by pressure.

Extended Bonnet

According to ISO28921, extended bonnet is used to in order to perform in cryogenic working environments.

Bush Retainer

Provides precise positioning of the bush to make sure it always stands in the correct position under cryogenic working environments.

Valve Disc

Stainless steel with hard chrome plate. A streamlined design enhanced to lower noise and turbulence.

Valve Body

Compliance with API 609 & ASME B16.34. In order to make the valve context intuitive and straightforward. An additional name plate is designed to mark detailed information.

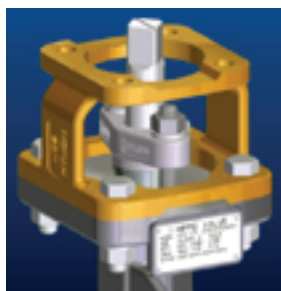
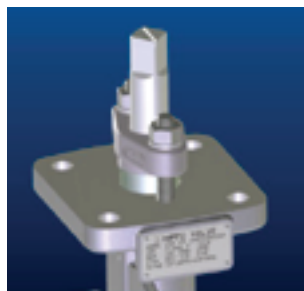
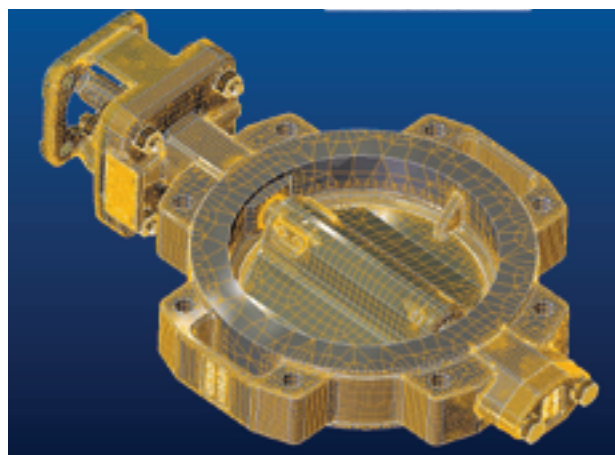
Thrust Plate

Stainless steel Woven Fabric Metal is used to reduce operating friction between stem and the bottom cover.

FEATURES

■ Valve Body

Max-Seal's V-Type 100L/200L Series High Performance Butterfly Valves are designed with 100% compliance with API 609 and ASME B16.34. Utilizing PTC Creo Parametric (Pro/E) Computer-add-design in every component resulting in superior reliability.

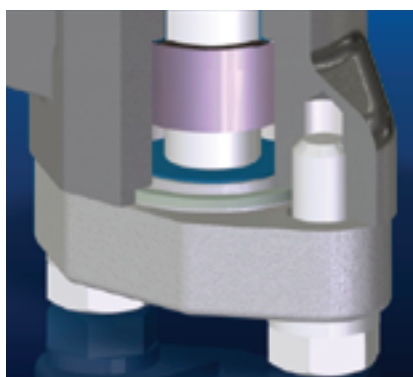
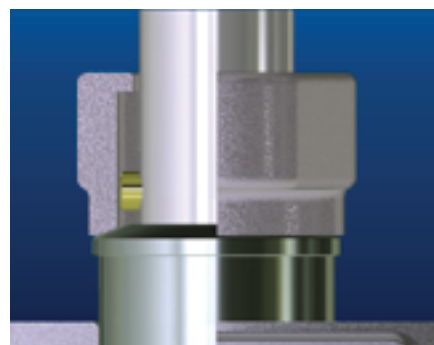


■ Top Mounting

Compliant with ISO 5211. Yoke designed with draining system for outdoor service.

■ Anti-Blow-out Stem (Upside) and Anti-Electrostatic System

An anti-Blow-out design and *optional* Anti-electrostatic system. Compliance with API 609 and ATEX.

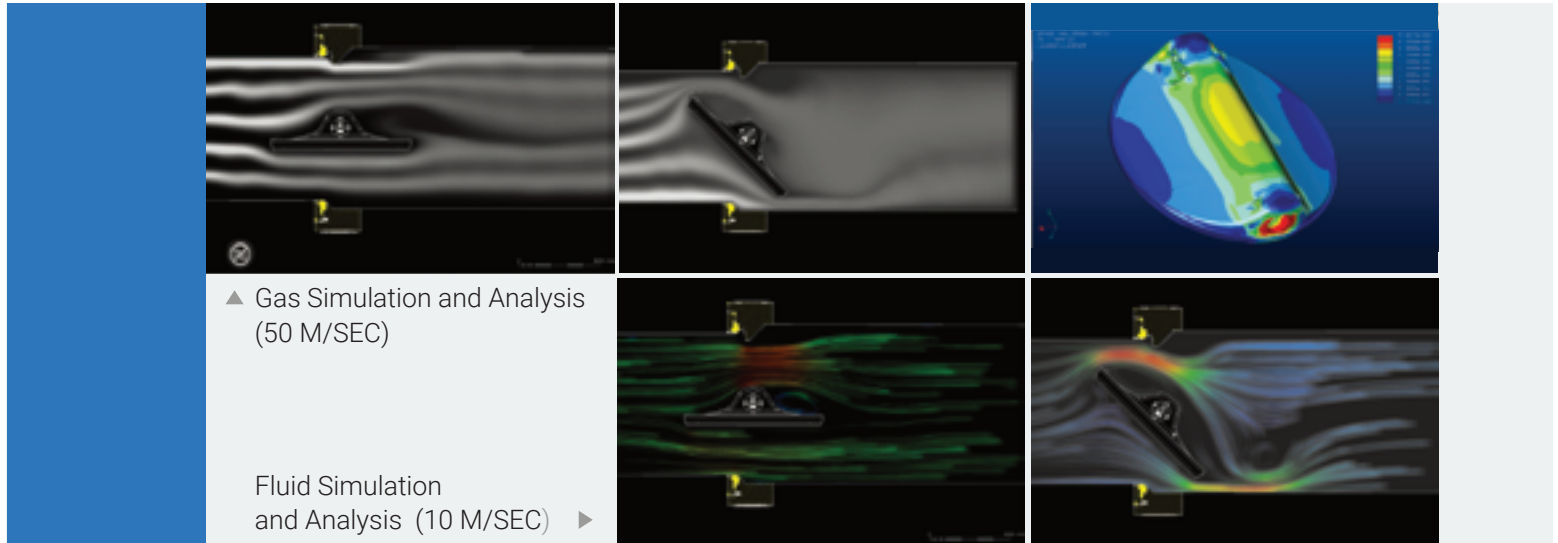


■ Anti-Blow-Out Stem(Downside)and Thrust Ring for Positioning

A Rigid Thrust Ring always keeps the stem in an accurate position. The Thrust Ring and stem thread are also designed to prevent blow-out.

Valve Disc

The valve disc uses stainless steel with computer-added PTC Creo Parametric software to analyze stress performance to achieve API 598. Based on advanced 3D CAD simulation,, Max-Seal has developed a streamlined disc with lower noise and turbulence. Meanwhile, all our disc's and stem's surfaces are hard-chrome-plated. This feature significantly advances disc performance with anti-rubbing and anti-shocking, which results in better life cycle.



Marking and Name Plate

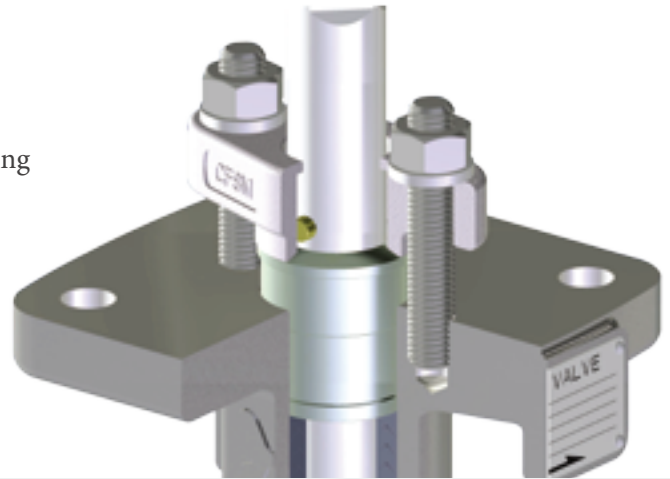
The Max-Seal Valve is designed with a name plate which provides all the valve's details. Complies with MSS-SP-25 & API 609.

Low Fugitive Emission Gland Packing System

Compliant with latest DIN3780 and MSS-SP143

Gland Flange and Gland Bush

A fully adjustable two-piece gland with spherical mating surfaces to ensure an even packing load over 360 °

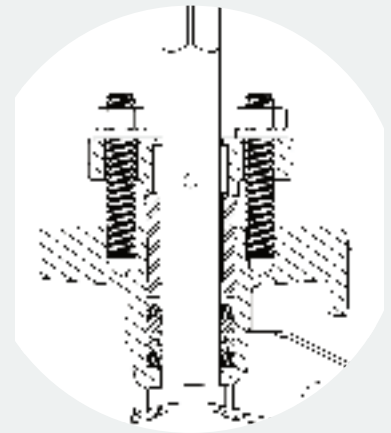


Gland Packing System

Five Types:

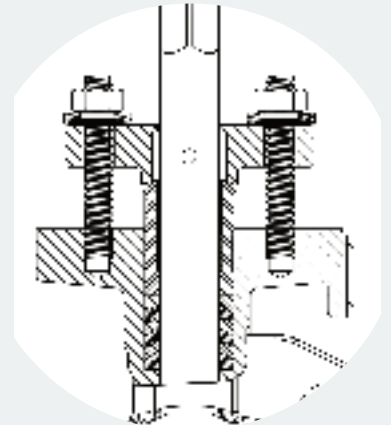
1. Standard V-Type PTFE or RTFE
 2. Live - Loaded Low Fugitive Emission V-Type PTFE or RTFE
 3. Standard GRAPHITE
 4. Live -Loaded Low Fugitive Emission GRAPHITE
- Having EVSP 9000 or 3300W is Optional.*
5. Live -Loaded with Lantern Ring

1 Standard V Type PTFE or RTFE Gland Packing System



4 Live-Loaded Low Fugitive Emission GRAPHITE Gland Packing System

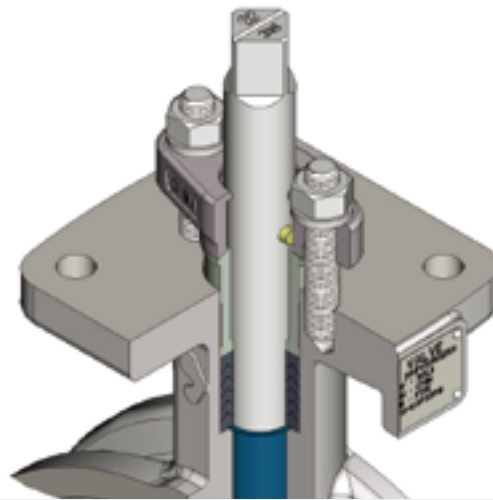
Having EVSP 9000 or 3300W as an option.



Long Gland Bush for Positioning

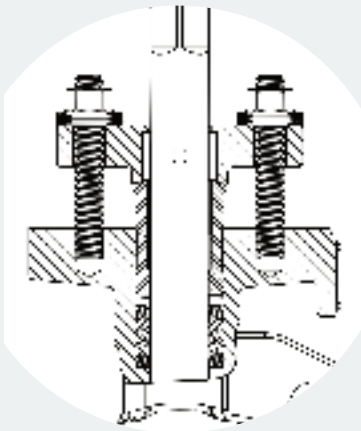
Long gland bush ensures the gland flange is always kept in the center while adjusting packing gland.

Prevents the gland bush from rubbing and jamming the stem.



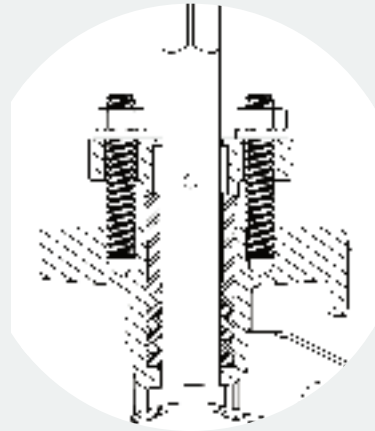
2

Live -Loaded Low Fugitive Emission V-Type PTFE or RTFE Packing System



3

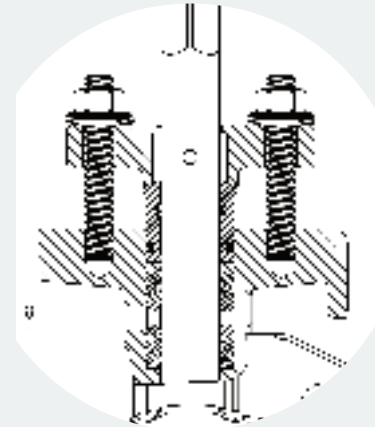
Standard GRAPHITE Packing System



5

Live -Loaded with Lantern Ring Gland Packing System

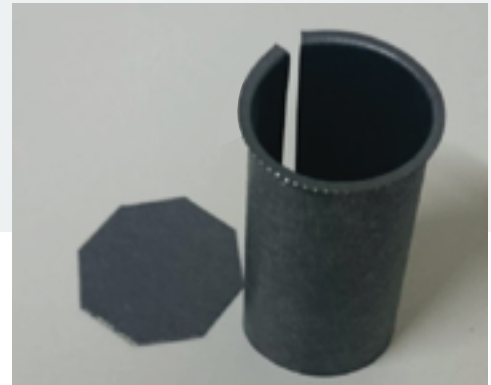
A lantern ring with double packing leak-off-monitoring, provides functionality of purge and monitors leakage from bottom packing.



Self-Lubricating Bush

Uses Woven Fabric Metal stem bush.

Has an excellent working temperature, strength rating, and low friction factor.

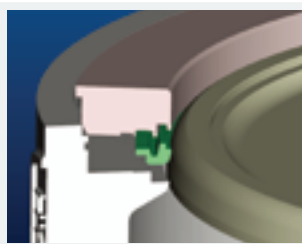


Taper Pin

Disc taper pins are tangentially positioned half in the disc and half in the stem, placing them in compression rather than shear, which eliminates the potential of failure. This method is 3 times stronger than the traditional shear way.

Valve Seat

The V TYPE 100L/200L Series design uses Soft Seats. Pressure and Temperature Ratings are compliant with API 609. Using reliable section and a corresponding floating seat design to fulfill bi-directional, drop-tight, zero leakage shut-off throughout all pressure ranges, as well as fully rated bi-directional pressure. This design reduces rubbing and friction between the disc and the seat, which significantly extends the operation life cycle.



Soft Seat

Soft Seated design is certified with BS 6364, ISO 28921. These certifications provide high safety in hazardous applications.

QUALITY ASSURANCE

Max-Seal is extremely proud of the various certifications we have successfully passed around the world. As a supplier, we are delighted to list some of our major certifications and patents. Through these certification, we believe that Max-Seal will be your best option in the Butterfly Valve Industry.



Fugitive Emission:TUV ISO 15848-1



ISO 9001:2008



CE/PED Module H 2014/68/EU



CE/PED Module H 2014/68/EU



Fire Safe - ISO 10497:2010



Fire Safe - API 607:2010



Anti-Loose Lever Operator Ring Certificate Of Patent



Reliable Gear Operator Certificate Of Patent



Screwless Valve Retainer Ring Certificate Of Patent



ISO 9001:2008



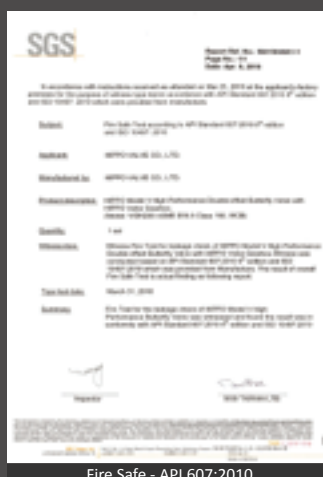
Fugitive Emission:TUV ISO 15848-1



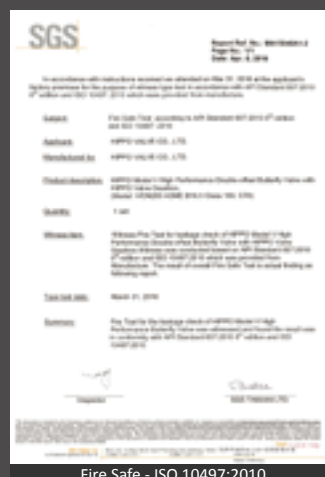
CE/PED Module H 2014/68/EU - Certified



Anti-Loose Lever Operator Ring Certificate Of Patent



Fire Safe - API 607:2010



Fire Safe - ISO 10497:2010

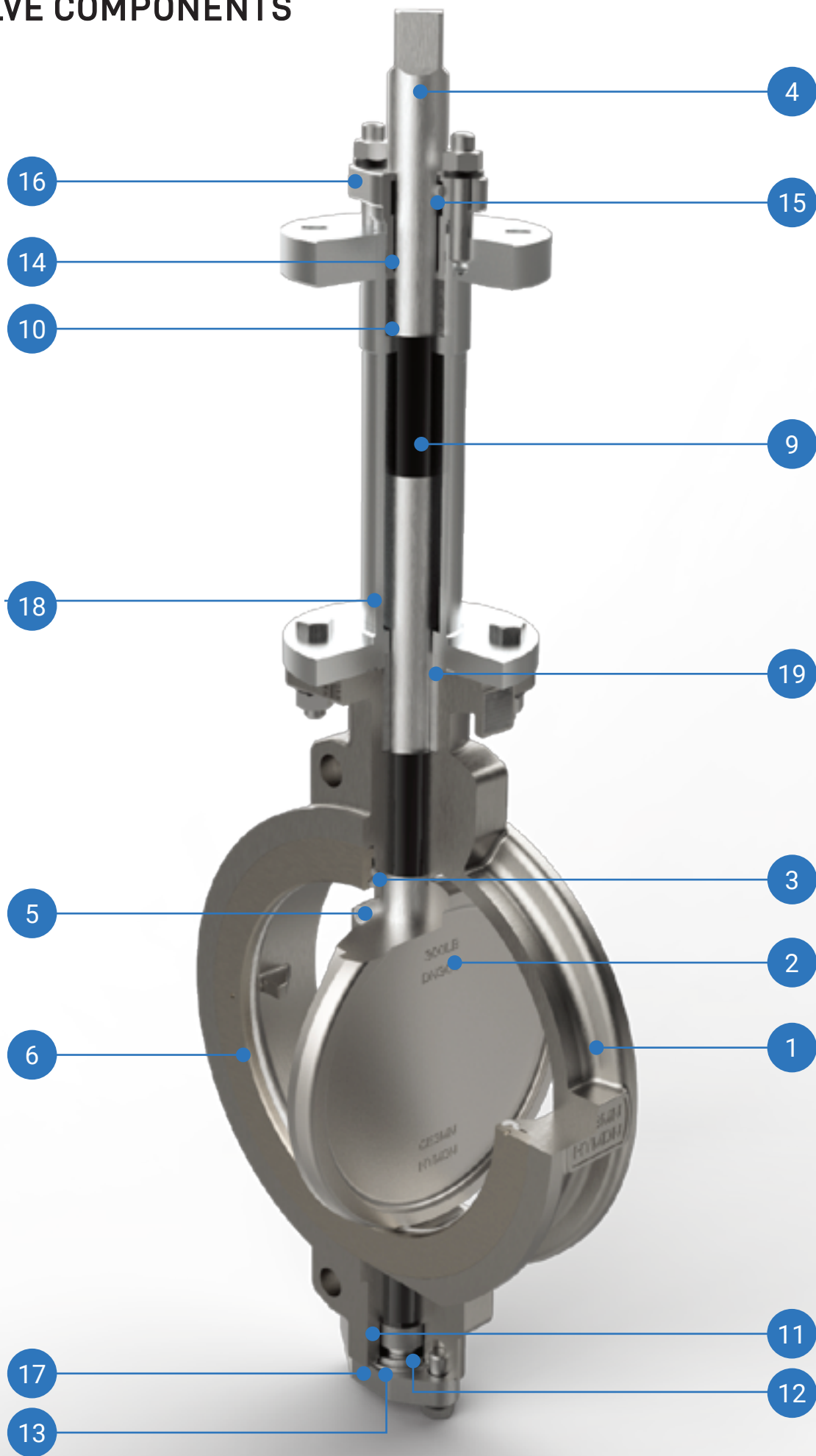


Reliable Gear Operator Certificate Of Patent



Screwless Valve Retainer Ring Certificate Of Patent

VALVE COMPONENTS



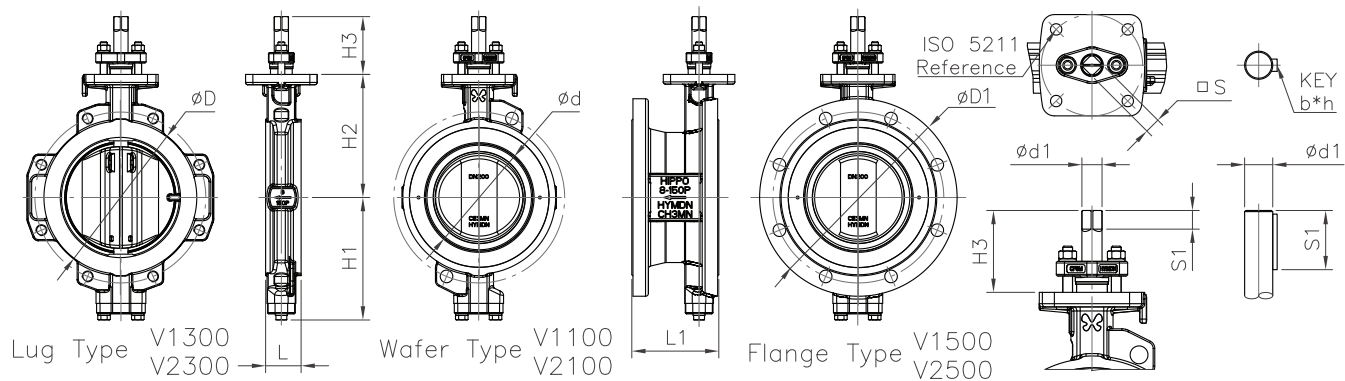
ITEM	NAME	QTY	MATERIAL			REMARK
1	Body	1	A351 Gr. CF8		A351 Gr. CF8M	
2	Disc	1	A351 Gr. CF8		A351 Gr. CF8M	●
3	Seat	1	PCTFE			★
4	Stem	1	A182 Gr. F6A	A182 Gr. F304	A182 Gr. F316	●
5	Taper Pin	2	A182 Gr. F316L			
6	Retainer Ring	1	A351 Gr. CF8		A351 Gr. CF8M	
9	Stem Bush	1	Woven Fabric Metal		A182 Gr. F316	
10	Gland Packing	1	PCTFE	RTFE	GRAPHITE	
11	Thrust Ring	3	A351 Gr. CF8M			
12	Thrust Plate	1	Woven Fabric Metal			
13	Gasket	1	PCTFE	RTFE	GRAPHITE	
14	Gland Bush	1	A351 Gr. CF8M			
15	Anti-Blow-Out Pin	1	A182 Gr. F316			
16	Gland Flange	1	A351 Gr.CF8			
17	Bottom Cover	1	A351 Gr. CF8M			
18	Extend Bonnet	1	A351 Gr. CF8M			
19	Bush Retainer	1	A351 Gr. CF8M			

Remark

● Surface is Hard Chrome Plated

★ Working temperature: PCTFE - **-384.8 °F ~ 248°F**
-196℃ ~ 120℃

Low-temperature Bare Shaft



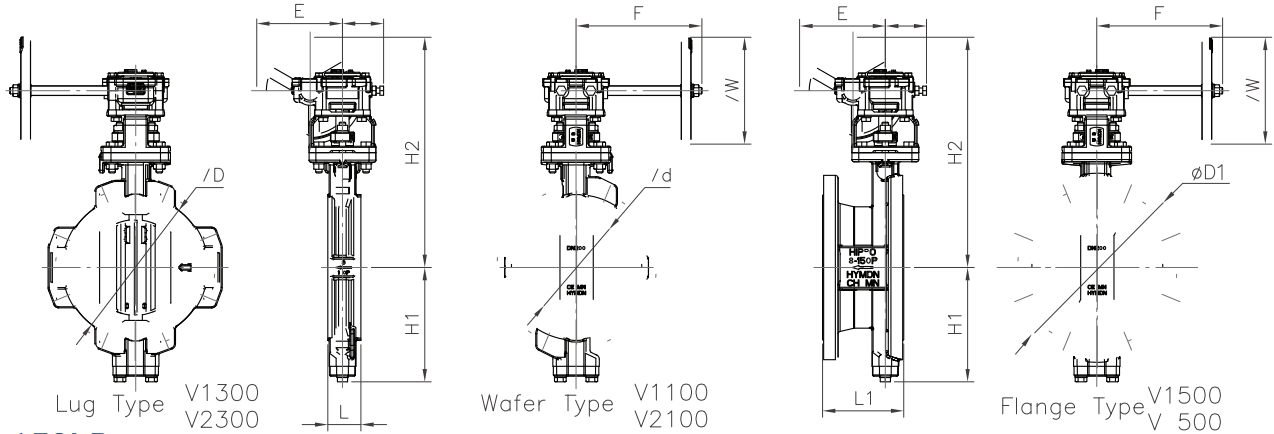
150LB

SIZE		L	L1	D	D1	d	H1	H2	H3	S1	d1	S	ISO	Weight					
mm	in													Wafer(kg)	Wafer(lb)	Lug(kg)	Lug(lb)	Flange(kg)	Flange(lb)
50	2	45	-	95	150	46	118	128	86	18	18	14	F10	10	22	11	24.2	-	-
65	2.5	48	-	112	180	61	126	136	86	18	18	14	F10	11	24.2	12	26.4	-	-
80	3	48	114	126	190	76	134	140	86	18	18	14	F10	12	26.4	13	28.6	18	39.6
100	4	54	127	155	230	96	144	150	86	18	18	14	F10	13	28.6	17	37.4	23	50.6
125	5	57	-	184	255	118	178	170	89	21	22	17	F10	16	35.2	22	48.4	-	-
150	6	57	140	215	280	143	190	185	89	21	22	17	F10	18	39.6	24	52.8	32	70.4
200	8	62	152	267	345	188	214	215	101	23	25	19	F12	28	61.6	37	81.4	53	116.6
250	10	70	165	326	405	236	254	260	104	26	28	22	F12	40	88	55	121	71	156.2
300	12	81	178	375	485	281	298	290	129	31	35	27	F14	60	132	81	178.2	111	244.2
350	14	92	190	416	535	320	328	320	134	36	42	32	F14	77	169.4	104	228.8	140	308
400	16	102	216	480	595	371	377	370	158	40	50	36	F16	121	266.2	160	352	196	431.2
450	18	114	222	534	635	420	402	395	158	40	50	36	F16	154	338.8	196	431.2	229	503.8
500	20	127	229	588	700	469	437	430	168	50	60	46	F16	194	426.8	265	538	286	629.2
600	24	154	267	692	815	549	492	480	240	90	65	18*12	F25	327	719.4	430	946	457	1005.4
700	28	165	292	800	927	655	570	555	245	95	75	20*12	F25	437	961.4	577	1269.4	686	1509.2
750	30	190	318	857	984	698	605	600	300	100	85	25*14	F30	606	1333.2	716	1575.2	889	1955.8
800	32	190	318	910	1060	755	630	625	310	110	90	25*14	F30	647	1423.4	864	1900.8	1014	2230.8
900	36	203	330	1000	1168	870	690	665	320	120	100	28*16	F30	763	1678.6	963	2118.6	1282	2820.4
1000	40	216	410	1115	1289	943	768	765	360	130	115	32*18	F35	1050	2310	1330	2926	1651	3632.2
1100	44	254	410	1220	1403	1045	818	815	360	130	115	32*18	F35	1287	2831.4	1639	3605.8	2173	4780.6
1200	48	254	470	1330	1510	1145	884	880	360	130	125	36*20	F35	1513	3328.6	1898	4175.6	2651	5832.2

300LB

SIZE		L	L1	D	D1	d	H1	H2	H3	S1	d1	S	ISO	Weight					
mm	in													Wafer(kg)	Wafer(lb)	Lug(kg)	Lug(lb)	Flange(kg)	Flange(lb)
50	2	45	-	95	-	46	118	128	86	18	18	14	F10	10	22	12	26.4	-	-
65	2.5	48	-	112	-	61	126	136	86	18	18	14	F10	11	24.2	13	28.6	-	-
80	3	48	114	126	190	76	134	140	86	18	18	14	F10	12	26.4	15	33	18	39.6
100	4	54	127	155	230	96	144	150	86	18	18	14	F10	13	28.6	17	37.4	23	50.6
125	5	57	-	184	-	118	178	170	89	21	22	17	F10	16	35.2	22	48.4	-	-
150	6	59	140	224	318	143	199	200	101	23	25	19	F12	26	57.2	34	74.8	50	110
200	8	73	152	280	381	188	234	240	104	26	28	22	F12	36	79.2	51	112.2	76	167.2
250	10	83	165	345	445	236	278	270	129	31	35	27	F14	64	140.8	83	182.6	107	235.4
300	12	92	178	395	521	281	318	310	134	36	42	32	F14	84	184.8	114	250.8	161	354.2
350	14	117	190	440	585	320	367	360	158	40	50	36	F16	128	281.6	184	404.8	215	473
400	16	133	216	495	648	371	392	385	168	50	60	46	F16	171	376.2	241	530.2	283	622.6
450	18	149	222	560	712	420	437	425	240	90	65	18*12	F25	266	585.2	368	809.6	464	1020.8
500	20	159	229	622	775	469	465	450	245	95	75	20*12	F25	323	710.6	447	983.4	578	1271.6
600	24	181	267	720	915	549	535	530	310	110	90	25*14	F30	528	1161.6	739	1625.8	906	1993.2

Low-temperature Gear Operation



150LB

● Operator chosen is according to following condition: $\Delta 10$ Bar

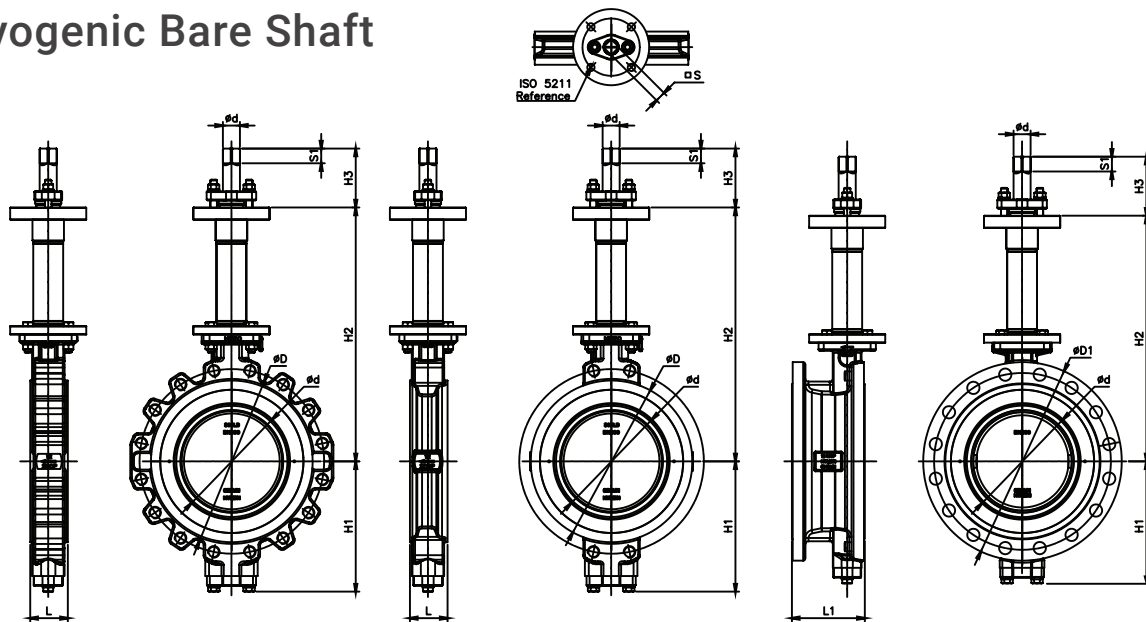
SIZE		L	L1	D	D1	d	H1	H2	W	G	E	F	Weight (kg)			Gear Model	Gear Model
mm	in												Wafer	Lug	Flange		
50	2	45	-	95	150	46	118	282	100	66	97	133	10	11	-	G07	1:40
65	2.5	48	-	112	180	61	126	290	100	66	97	133	11	12	-	G07	1:40
80	3	48	114	126	190	76	134	319	150	66	122	133	12	13	18	G07	1:40
100	4	54	127	155	230	96	144	329	150	66	122	133	13	17	23	G07	1:40
125	5	57	-	184	255	118	178	349	150	66	122	133	16	22	-	G07	1:40
150	6	57	140	215	280	143	190	364	150	66	122	133	18	24	32	G07	1:40
200	8	62	152	267	345	188	214	431	200	77	161	236	28	37	53	G10	1:40
250	10	70	165	326	405	236	254	476	200	77	161	236	40	55	71	G10	1:40
300	12	81	178	375	485	281	298	529	200	94	183	236	60	81	111	G12	1:60
350	14	92	190	416	535	320	328	559	200	94	183	236	77	104	140	G12	1:60
400	16	102	216	480	595	371	377	690	300	120	257	324	121	160	196	G14	1:64
450	18	114	222	534	635	420	402	715	300	120	257	324	154	196	229	G14	1:64
500	20	127	229	588	700	469	437	750	300	120	257	324	194	265	286	G14	1:64
600	24	154	267	692	815	549	492	888	400	153	352	374	327	430	457	G16	1:96
700	28	165	292	800	927	655	570	963	400	153	352	374	437	577	686	G16	1:96
750	30	190	318	857	984	698	605	1165	600	185	512	446	606	716	889	G25	1:125
800	32	190	318	910	1060	755	630	1190	600	185	512	446	647	864	1014	G25	1:125
900	36	203	330	1000	1168	870	690	1230	600	185	512	446	763	963	1282	G25	1:125
1000	40	216	410	1115	1289	943	768	1360	600	185	512	446	1050	1330	1651	G30	1:125
1100	44	254	410	1220	1403	1045	818	1410	600	185	512	446	1287	1639	2173	G30	1:125
1200	48	254	470	1330	1510	1145	884	1475	600	185	512	446	1513	1898	2651	G30	1:125

300LB

● Operator chosen is according to following condition: $\Delta 20$ Bar

SIZE		L	L1	D	D1	d	H1	H2	W	G	E	F	Weight (kg)			Gear Model	Gear Model
mm	in												Wafer	Lug	Flange		
50	2	45	-	95	-	46	118	282	100	66	97	133	10	12	-	G07	1:40
65	2.5	48	-	112	-	61	126	290	100	66	97	133	11	13	-	G07	1:40
80	3	48	114	126	190	76	134	319	150	66	122	133	12	15	18	G07	1:40
100	4	54	127	155	230	96	144	329	150	66	122	133	13	17	23	G07	1:40
125	5	57	-	184	-	118	178	349	150	66	122	133	16	22	-	G07	1:40
150	6	59	140	224	318	143	199	416	200	77	161	236	26	34	50	G10	1:40
200	8	73	152	280	381	188	234	456	200	77	161	236	36	51	76	G10	1:40
250	10	83	165	345	445	236	278	509	200	94	183	236	64	83	107	G12	1:60
300	12	92	178	395	521	281	318	549	200	94	183	236	84	114	161	G12	1:60
350	14	117	190	440	585	320	367	680	300	120	257	324	128	184	215	G14	1:64
400	16	133	216	495	648	371	392	705	300	120	257	324	171	241	283	G14	1:64
450	18	149	222	560	712	420	437	833	400	153	352	374	266	368	464	G16	1:96
500	20	159	229	622	775	469	465	858	400	153	352	374	323	447	578	G16	1:96
600	24	181	267	720	915	549	535	1095	600	185	512	446	528	739	906	G25	1:125

Cryogenic Bare Shaft



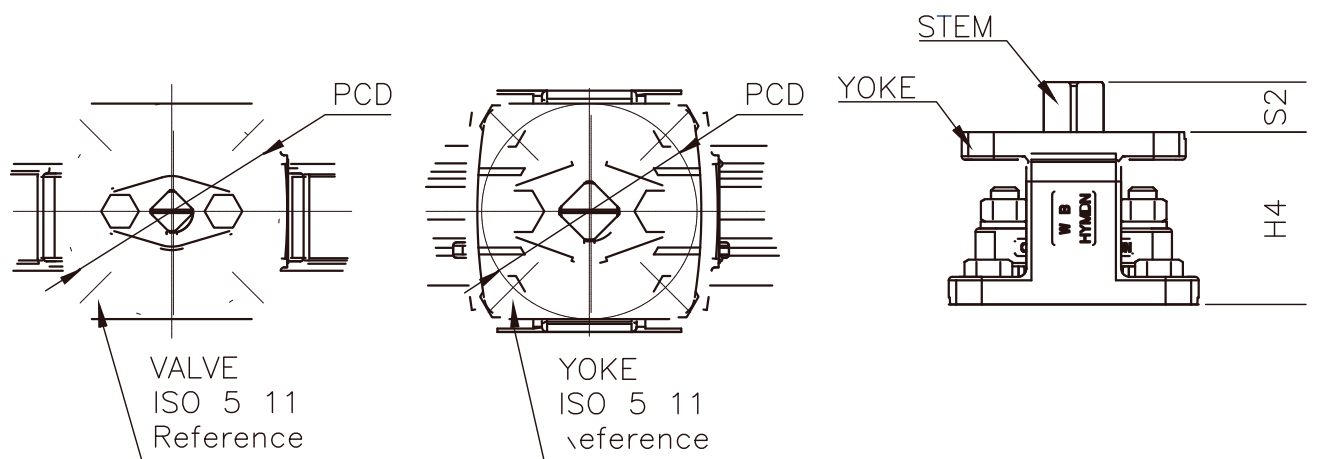
150LB

SIZE		L	L1	D	D1	d	H1	H2	H3	S1	d1	S	ISO
mm	in											(b*h)	
50	2	45	-	95	-	46	118	378	86	18	18	14	F10
65	2.5	48	-	112	-	61	126	386	86	18	18	14	F10
80	3	48	114	126	190	76	134	440	86	18	18	14	F10
100	4	54	127	155	230	96	144	450	86	18	18	14	F10
125	5	57	-	184	-	118	178	470	89	21	22	17	F10
150	6	57	140	215	280	143	190	535	89	21	22	17	F10
200	8	62	152	267	345	188	214	565	101	23	25	19	F12
250	10	70	165	326	405	236	254	660	104	26	28	22	F12
300	12	81	178	375	485	281	298	690	129	31	35	27	F14
350	14	92	190	416	535	320	328	770	134	36	42	32	F14
400	16	102	216	480	595	371	377	820	158	40	50	36	F16
450	18	114	222	534	635	420	402	895	158	40	50	36	F16
500	20	127	229	588	700	469	437	930	168	50	60	46	F16
600	24	154	267	692	815	549	492	980	240	90	65	18*12	F25
700	28	165	292	800	927	655	570	1155	245	95	75	20*12	F25
750	30	190	318	857	984	698	605	1200	300	100	85	25*14	F30
800	32	190	318	910	1060	755	630	1225	310	110	90	25*14	F30
900	36	203	330	1000	1168	870	690	1365	320	120	100	28*16	F30

300LB

SIZE		L	L1	D	D1	d	H1	H2	H3	S1	d1	S	ISO
mm	in											(b*h)	
50	2	45	-	95	-	46	118	378	86	18	18	14	F10
65	2.5	48	-	112	-	61	126	386	86	18	18	14	F10
80	3	48	114	126	190	76	134	440	86	18	18	14	F10
100	4	54	127	155	230	96	144	450	86	18	18	14	F10
125	5	57	-	184	-	118	178	470	89	21	22	17	F10
150	6	59	140	224	318	143	199	550	101	23	25	19	F12
200	8	73	152	280	381	188	234	590	104	26	28	22	F12
250	10	83	165	345	445	236	278	670	129	31	35	27	F14
300	12	92	178	395	521	281	318	710	134	36	42	32	F14
350	14	117	190	440	585	320	367	810	158	40	50	36	F16
400	16	133	216	495	648	371	392	835	168	50	60	46	F16
450	18	149	222	560	712	420	437	925	240	90	65	18*12	F25
500	20	159	229	622	775	469	465	950	245	95	75	20*12	F25
600	24	181	267	720	915	549	535	1030	310	110	90	25*14	F30

Yoke

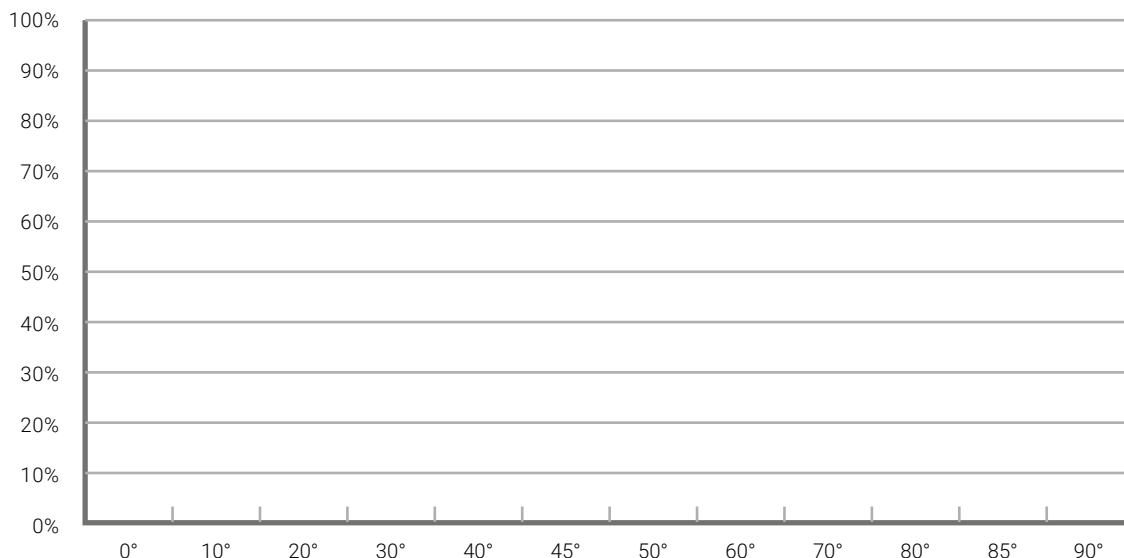


150LB DN50 - DN1200

SIZE		H4	S2	Yoke		Valve
mm	in			ISO	PCD	ISO
50	2	70	16	F07	70	F10
65	2.5	70	16	F07	70	F10
80	3	70	16	F07	70	F10
100	4	70	16	F07	70	F10
125	5	70	19	F07	70	F10
150	6	70	19	F07	70	F10
200	8	80	21	F10	102	F12
250	10	80	24	F10	102	F12
300	12	100	29	F12	125	F14
350	14	100	34	F12	125	F14
400	16	120	38	F14	140	F16
450	18	120	38	F14	140	F16
500	20	120	48	F14	140	F16
600	24	150	90	F16	165	F25
700	28	150	95	F16	165	F25
750	30	200	100	F25	254	F30
800	32	200	110	F25	254	F30
900	36	200	120	F25	254	F30

Cv FLOW COEFFICIENT

Cv curve %



150LB

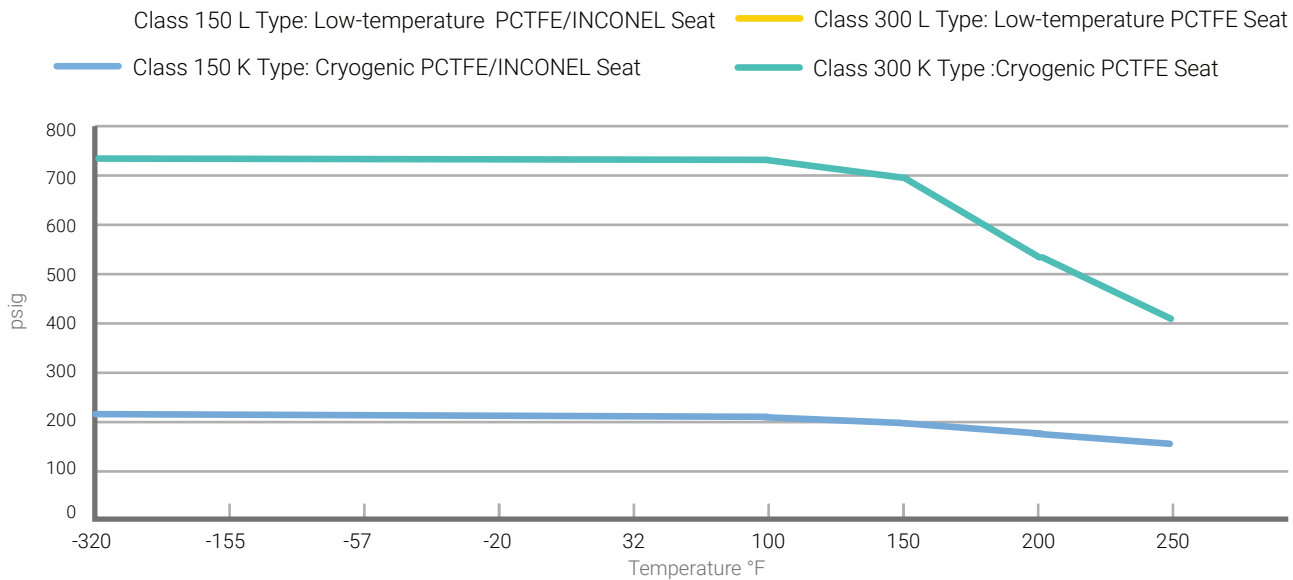
SIZE		Cv Value										
mm	in	10°	20°	30°	40°	45°	50°	60°	70°	80°	85°	90°
50	2	0	8	22	36	44	51	60	69	72	70	70
65	2.5	2	16	38	61	71	83	109	135	146	152	150
80	3	6	33	62	94	108	118	143	176	208	230	227
100	4	16	58	106	155	178	213	274	349	433	465	473
125	5	20	94	167	230	263	310	391	488	561	604	605
150	6	40	147	242	335	382	422	560	729	925	975	1010
200	8	66	237	368	509	606	712	985	1296	1640	1715	2004
250	10	139	390	595	807	963	1168	1606	2134	2814	3180	3199
300	12	204	548	820	1138	1357	1591	2219	3067	4085	4484	4672
350	14	264	674	972	1386	1658	1994	2840	3925	5164	5828	5947
400	16	384	864	1196	1765	2155	2611	3755	5105	6975	7920	8182
450	18	508	1092	1551	2341	2881	3522	5125	7134	9511	10599	11548
500	20	626	1294	1792	2651	3304	4082	5919	8256	11429	13126	13813
600	24	1047	2251	3178	4563	5543	6568	9277	12932	17093	18328	19021

300LB

SIZE		Cv Value										
mm	in	10°	20°	30°	40°	45°	50°	60°	70°	80°	85°	90°
80	3	6	33	62	94	108	118	143	176	208	230	227
100	4	16	58	106	155	178	213	274	349	433	465	473
125	5	20	94	167	230	263	310	391	488	561	604	605
150	6	37	137	225	312	355	393	521	678	860	907	939
200	8	62	220	343	473	563	662	916	1206	1525	1595	1864
250	10	129	362	554	750	896	1087	1493	1985	2617	2957	2975
300	12	190	510	762	1059	1262	1480	2064	2852	3799	4170	4345
350	14	246	627	904	1289	1542	1854	2641	3650	4803	5420	5531
400	16	357	803	1112	1642	2004	2428	3492	4748	6487	7365	7609
450	18	473	1015	1442	2177	2679	3275	4766	6634	8845	9857	10739
500	20	583	1204	1667	2466	3073	3797	5504	7678	10629	12207	12846
600	24	974	2093	2956	4244	5155	6108	8627	12027	15897	17045	17689

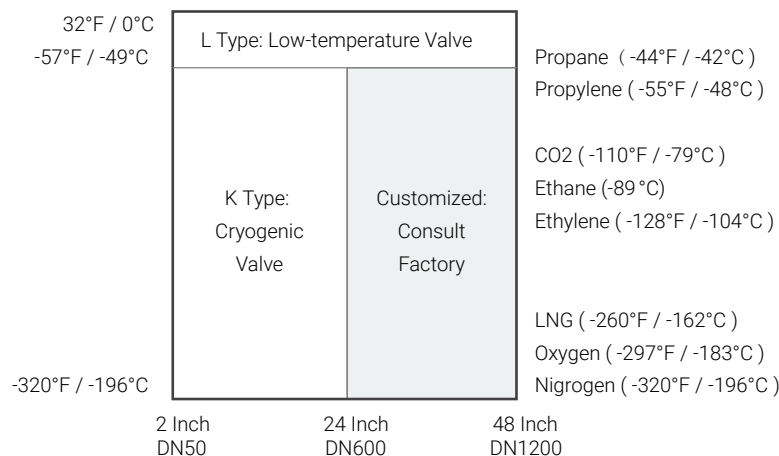
PRESSURE-TEMPERATURE RATING

Seat Type Ratings



Body and Seat Temperature		Class 150								Class 300			
		L Type: Low-temperature				K Type: Cryogenic				L Type		K Type	
		PCTFE		INCONEL		PCTFE		INCONEL		PCTFE		PCTFE	
°F	°C	psig	bar	psig	bar	psig	bar	psig	bar	psig	bar	psig	bar
-320	-196	-	-	-	-	285	19.7	285	19.7	-	-	740	51
-155	-104	-	-	-	-	285	19.7	285	19.7	-	-	740	51
-57	-49	285	19.7	285	19.7	285	19.7	285	19.7	740	51	740	51
-20	-29	285	19.7	285	19.7	285	19.7	285	19.7	740	51	740	51
32	0	285	19.7	285	19.7	285	19.7	285	19.7	740	51	740	51
100	38	285	19.7	285	19.7	285	19.7	285	19.7	740	51	740	51
150	66	273	18.8	273	18.8	273	18.8	273	18.8	708	48.8	708	48.8
200	93	260	17.9	260	17.9	260	17.9	260	17.9	550	37.9	550	37.9
250	121	245	16.9	245	16.9	245	16.9	245	16.9	425	29.3	425	29.3

Fluid Service Range



NOTES

- (a) The factory acceptance test is done with Nitrogen or Helium gas at lowest temperature.
- (b) The detail test criteria may vary or can be customized according to the target application.
- (c) Please contact factory for any further details.



RESILIENT SEATED BUTTERFLY VALVES

Performance Series

Available in Wafer and Lug Styles

Max-Seal Performance Series valves are designed and manufactured in accordance with the requirements of USCG CFR 46 Category A.

MODELS:

Wafer 51

Lug 52

SIZE RANGE:

2" – 36"

PRESSURE RATING:

2" – 12" 200 WOG / Bidirectional Flow

14" – 24" 175 WOG / Bidirectional Flow

250 WOG – Optional – Unidirectional Flow



DI Nylon
Coated Disc

UNIQUE DESIGN FEATURES:

- Ductile Iron Body
- Rugged Heavy Duty Construction
- High Quality Epoxy Coating for Excellent Corrosion Resistance
- 2-Piece Stem Design Allows for Easy Assembly and Maintenance with Higher Flow Capacity
- ISO Actuator Mounting

AVAILABLE DISC

- 316 Stainless Steel, DI/Nylon coated, Aluminum Bronze
- Special Alloys Available

Max-Seal Concentric Butterfly Valves are backed by the resources and experience of over thirty five years of process valve and automation knowledge.

www.maxsealinc.com

BUTTERFLY VALVE — COMPONENTS / DESIGN FEATURES

Standard parts list

No.	Part	Q'ty	Material	Code
1	Valve Body	1	Ductile Iron A536 Cast Iron Stainless Steel CF8M Bronze ASTM B62	DI CI SS BZ
2	Pin	1	Alloy Steel	
3	O-Ring	1	Buna-N	B
4	Seat Back Up	1	Phenolic	~
5	Seat	1	EPDM Buna-N (Food Grade) Vitron	E B V
6	Lower Shaft	1	Stainless 416 Stainless 316 17-4Ph	S6 SS S7
7	Disc	1	Nylon Coated Ductile Iron Stainless 316 CF8M Stainless 304 CF8 Aluminum Bronze	D1 SS S4 AB
8	Upper Shaft	1	Stainless 416 Stainless 316 17-4Ph	S6 SS S7
9	Bushing	1	Fiberglass Reinforced PTFE	T
10	O-Ring	1	Buna-N	B
11	Bushing	1	Fiberglass Reinforced PTFE	T
12	Pin	1	Alloy Steel	
13	Bushing	1	PTFE	T
14	Lower Retainer**	1	Ductile Iron	
15	Upper Retainer**	1	Carbon Steel	
16	Bolts**	4	Carbon Steel	
17	Screw**	4	Carbon Steel	

** For 14"-24" valves

One piece body with extended neck allows clearance for flanges and up to 2½" of insulation.

Primary stem seals are formed by preloaded contact between the disc and seat. A secondary seal is effected by having a stem diameter greater than the stem hole in resilient seat. These seals provide a non-wetted body and stem, eliminating the need for corrosion resistant body material.

Field replaceable, phenolic bonded cartridge is blowout proof, stretch resistant, and non-collapsible, making it an ideal seat design for high velocity or vacuum service. Our resilient seat design eliminates the need for flange gaskets.

Valve sizes 16" & above are supplied with metal seat back up rings.

Max-Seal performance series butterfly valve model number codes

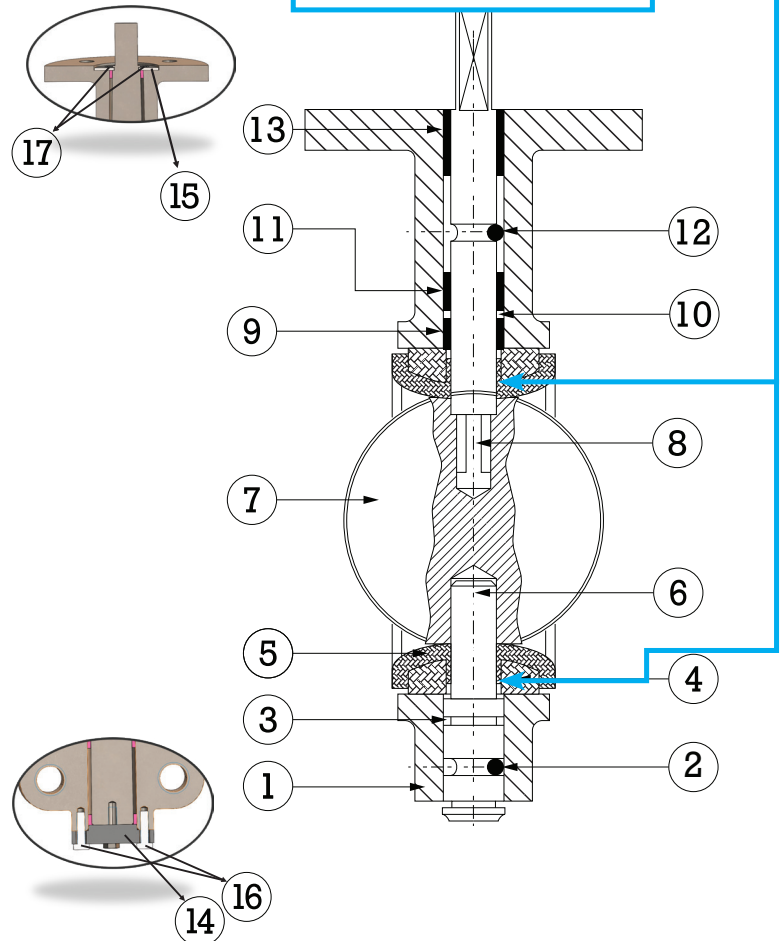
Model	Body Material		Disc Material		Stem Material		Seat Material		Operator		Size inch	Size mm
Wafer-51 Lug-52	Ductile Iron	DI	Nylon Coated Ductile Iron	DI	Stainless 416	S6	EPDM	E	Level	L	2"	50
	Cast Iron	CI	Stainless 316	SS	Stainless 316	SS	BUNA	B	Gear	G	3"	80
	Stainless Steel	SS	Stainless 304	S4	Stainless 410	S0	VITON	V	Bare Stem	N	4"	100
					17-4Ph	S7	TEFLON	T	Actuator	A	6"	150
					Monel	MO					8"	200

Accurate and smooth machined profile of disc edge requires minimal deformation of the resilient elastomer liner to achieve a positive seal. The low deformation results in low torque, less wear of the seat liner, and increased operational life.

Ordering Example by Part Number

Wafer	Ductile Iron	Stainless 316	Stainless 316	BUNA	Level	4"
Model	Body	Disc	Stem	Seat	Operator	Size
51	- DI	- SS	- SS	- B	- L	- 100

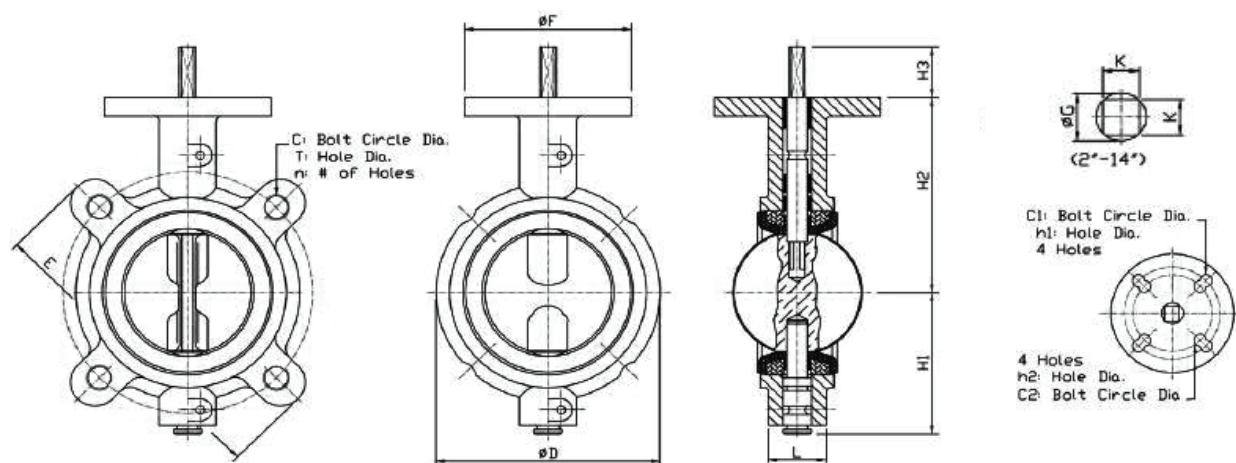
O-Rings are moulded in seat stem hole as standard



- High strength, square drive (2"-14") ensures a positive shaft to disc connection.
- Square drive offers direct ISO mounting of gear operator and automation equipment.
- Disc floats inside the seat for positive sealing and extended seat life.
- No pins or bolts exposed to flow.
- Offset shaft retainers mechanically retain the shaft in the body ensuring a blow out proof stem design.

Max-Seal Performance Series Valves Are Bidirectionally Bubble Tight. They Are Marked With An Arrow Indicating The Preferred High Pressure Side.

DIMENSIONS / TECHNICAL DATA



Note:

Verify mounting dimensions before manufacturing mounting hardware

ANSI Class 125 Concentric Butterfly Valves

Size		D	E	L	H1	H2	H3	H4	F	G	K	Flange Dimension			Mounting Base					Weight, lb	
inch	mm											C	T	n	C1	h1	C2	h2	ISO	wafer	lug
2	50	4.125	6.00	1.656	3.11	3.94	1.25	1.14	4.0	0.50	0.354	4.75	5/8-11unc	4	3.25	0.41	2.76	0.39	F07	5	7
2.5	65	4.875	7.00	1.75	3.46	4.59	1.25	1.37	4.0	0.50	0.433	5.50	5/8-11unc	4	3.25	0.41	2.76	0.39	F07	6.5	9
3	80	5.375	7.50	1.78	3.81	5.32	1.25	2.00	4.0	0.50	0.433	6.00	5/8-11unc	4	3.25	0.41	2.76	0.39	F07	7	9
4	100	6.875	9.00	2.05	4.49	6.61	1.25	2.00	4.0	0.625	0.433	7.50	5/8-11unc	8	3.25	0.41	2.76	0.39	F07	10.5	15.5
5	125	7.75	10.0	2.12	5.00	7.17	1.25	2.00	4.0	0.75	0.55	8.50	3/4-10unc	8	3.25	0.41	2.76	0.39	F07	13.5	19.5
6	150	8.75	11.0	2.19	5.51	7.68	1.25	2.00	4.0	0.75	0.55	9.50	3/4-10unc	8	3.25	0.41	2.76	0.39	F07	16.5	23.5
8	200	11.00	13.5	2.38	6.77	9.44	1.75	2.57	6.0	0.875	0.67	11.75	3/4-10unc	8	5.00	0.53	4.01	0.47	F10	31	38.5
10	250	13.38	16.0	2.58	8.03	11.22	1.75	2.88	6.0	1.125	0.87	14.25	7/8-9unc	12	5.00	0.53	4.01	0.47	F10	42.5	59.5
12	300	16.13	19.0	3.03	9.66	12.1	1.75	2.00	6.0	1.25	0.87	17.00	7/8-9unc	12	5.00	0.53	4.01	0.47	F10	65	93.5
14	350	17.16	20.9	3.07	10.7	14.49	1.77	3.6	6.0	1.24	0.87	18.75	1-8unc	12	5.00	0.53	4.01	0.47	F10	99	148
16	400	19.21	23.43	4.02	12.9	15.75	2.83	3.55	7.76	1.49	1.063	21.25	1-8unc	16	n/a	n/a	5.51	0.71	F14	147	215.5
18	450	21.22	25.16	4.49	13.5	16.61	2.83	3.55	7.76	1.69	1.063	22.75	1 1/8-7unc	16	n/a	n/a	5.51	0.71	F14	189	260
20	500	23.35	27.83	5.00	15.1	18.9	2.83	4.3	7.76	1.80	1.417	25.00	1 1/8-7unc	18	n/a	n/a	5.51	0.71	F14	276	384.5
24	600	32.44	32.76	6.06	18.79	22.12	3.23	5.4	10.87	2.13	1.417	29.50	1 1/4-7unc	18	n/a	n/a	6.50	0.87	F16	474	576.5

Larger sizes available through 120", consult factory

- **Pressure Ratings:**
2"-12" 200 psi; 14"-24" 175 psi
- **Lug Body for Dead End Service:**
2"-12" 150 psi; 14"-24" 125 psi
- **Higher Pressure Option:**
250 WOG, Sizes 2"-18"; 220 WOG, Size 20"-24" with 17-4Ph stem & seat modification in lug body
Step Machined in Body Helps Retain Seat Under High Pressure
Max-Seal valves are designed for bubble tight shutoff in either direction of flow. Each valve is factory tested to 110% of their pressure rating

Blowout-proof stem design

A heavy duty butterfly valve, designed for ANSI Class 125/150 flanges. These comply with MSS-SP25, MSS-SP67, & the requirements of MIL-V-22133C (ship) Type 1, Class A-D

Valve sizes up to 16" meet API 609 standard; Sizes 18"-24" with fine thread drilling meet API 609 standard

Positive Valve Position:

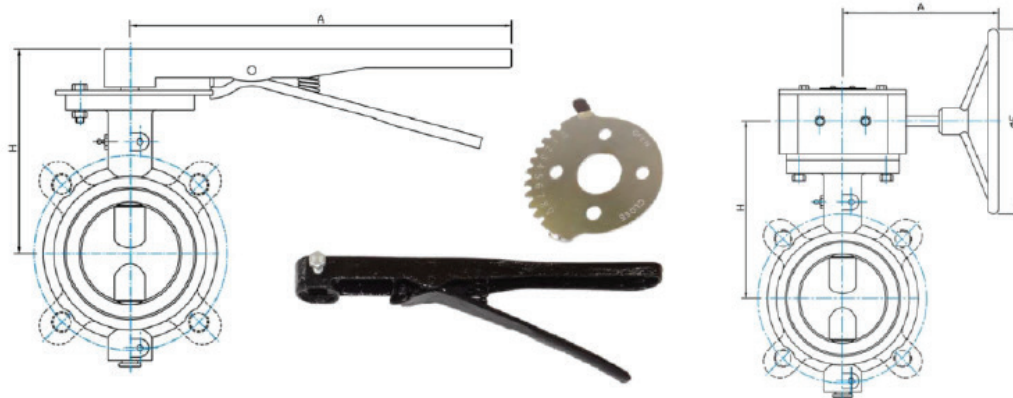
When the handle is parallel to the pipe, the valve is fully open. The orientation of the disc is indicated by a groove at the shaft end that is in line with the disc.

See Tech Bulletin 608-19 for bolting information

Vacuum Service up to 28" Hg

MAX-SEAL PERFORMANCE SERIES OFFERS LONGER SERVICE LIFE, GREATER RELIABILITY, EASE OF PARTS REPLACEMENT AND INTERCHANGEABILITY OF COMPONENTS.

HANDLE AND GEAR OPERATOR DIMENSIONS



Level-Lock 10 Position Type Handle Gear Operator

Size	2"	2.5"	3"	4"	5"	6"	8"	10"	12"
H	5.19	5.84	6.16	7.25	7.38	7.94	11.19	12.97	13.56
A	10.5	10.5	10.5	10.5	10.5	10.5	14	14	20

Size	2"	2.5"	3"	4"	5"	6"	8"	10"	12"	14"	16"	18"	20"	24"
H	5.41	6.07	6.38	7.48	7.60	8.16	11.13	12.91	13.45	16.13	18.27	21.42	21.42	24.92
F	5.9	5.9	5.9	5.9	5.9	5.9	11.8	11.8	11.8	11.8	11.8	11.8	11.8	15.35
A	6	6	6	6	6	6	9.84	9.84	9.84	10.94	10.94	10.94	10.49	12.05

VALVE FLOW COEFFICIENTS & TECHNICAL DATA

Max-Seal Valves are ideally suited for actuated applications

Seat Temperature Range

Material	Temperature Range
Buna-N (NBR)	0° to 200° F
EPDM	-40° to 275° F
VITON	0° to 300° F
Neoprene	-60° to 200° F
Hypalon	-40° to 250° F

Different seat and seat backing available consult factory



ACTUATOR MOUNTING

Max-Seal Offers a broad line of automation systems for precise proportioning of on-off control in either pneumatic or electronically powered units.

Cast Mounting Flange Accommodates all types of operators, offering two sets of slotted bolted circles ISO 5211 and industry popular type. It is designed to accept direct actuator mounting, some sizes may require a spacer plate.

Max-Seal Models 51, 51 Cv Value

Size		Angle of Opening								
INCH	MM	10°	20°	30°	40°	50°	60°	70°	80°	90°
2	50	0.1	5	12	24	45	64	90	125	135
2½	65	0.2	8	20	37	65	98	144	204	220
3	80	0.3	12	22	39	70	116	183	275	302
4	100	0.5	17	36	78	139	230	364	546	600
5	125	0.8	29	61	133	237	392	620	930	1022
6	150	2	45	95	205	366	605	958	1437	1579
8	200	3	89	188	408	727	1202	1903	2854	3136
10	250	4	151	320	694	1237	2047	3240	4859	5340
12	300	5	234	495	1072	1911	3162	5005	7505	8250

Streamlined Disc Design Reduces Pressure Drop and Maximizes Cv

Performance Series Torque Value

Size		Pressure Differential		
INCH	MM	50 psi	100 psi	200 psi
2	50	127	147	170
2½	65	135	168	193
3	80	206	225	259
4	100	350	387	445
5	125	525	605	646
6	150	825	997	1147
8	200	1495	1864	2144
10	250	2420	3140	3611
12	300	3612	4767	5482

All torques shown in the above chart can be used for both seating and unseating. Figured for wet service defined as lubricated clean and non abrasive line media.



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RESILIENT SEATED ISO BUTTERFLY VALVES

ISO Series

Butterfly Valves Designed for Direct Mount Automation

Models:

Wafer Type 51I

Lug Type 52I

Size Range

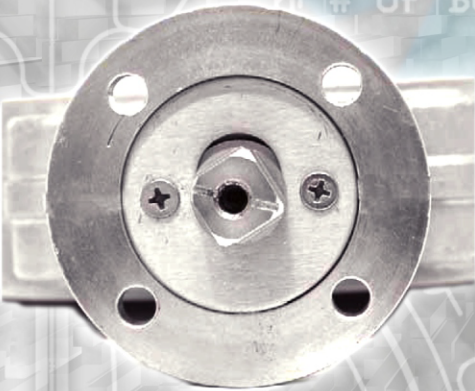
1 1/2" thru 48"

Pressure Rating

1 1/2"-12": 200 WOG

14" - 24": 175 WOG

ISO 5211



Design Features

- Ease of Automation
- Low Torque Operation
- Wafer Body Features Four Alignment Lugs
- Phenolic Backed Catridge Seats
- High Flow Capacity
- High Quality Body Coating for Excellent Corrosion Resistance
- 10 Position Locking Handle 1.5"-8"

Max-Seal Concentric Butterfly Valves are backed by the resources and experience of over thirty five years of process valve and automation experience.

www.maxsealinc.com

BUTTERFLY VALVE - COMPONENTS/DESIGN FEATURES

STANDARD PARTS LIST

No	Part Name	Material	Code
1	Body	Ductile Iron	DI
		Cast Iron	CI
2	Disc	Stainless 316 CF8M	SS
		Ductile Iron	DI
		Stainless 304 CF8	S4
		Aluminum Bronze	AB
3	Seat	Buna N (NBR)	N
		EPDM	E
		Viton	V
		PTFE	T
4	Seat Back Up	Phenolic	
5	Upper Shaft	SS420	S2
6	Lower Shaft	SS420	S2
7	Bushing	RPTFE + Graphite	RG
8	Lip Seal	Same as Seat	
9	Lock Plate	Stainless Steel	
10	Screw	SS304	
11	Plug	Steel Zinc Plated	CS
12	O - Ring	Same as Seat	

FEATURES:

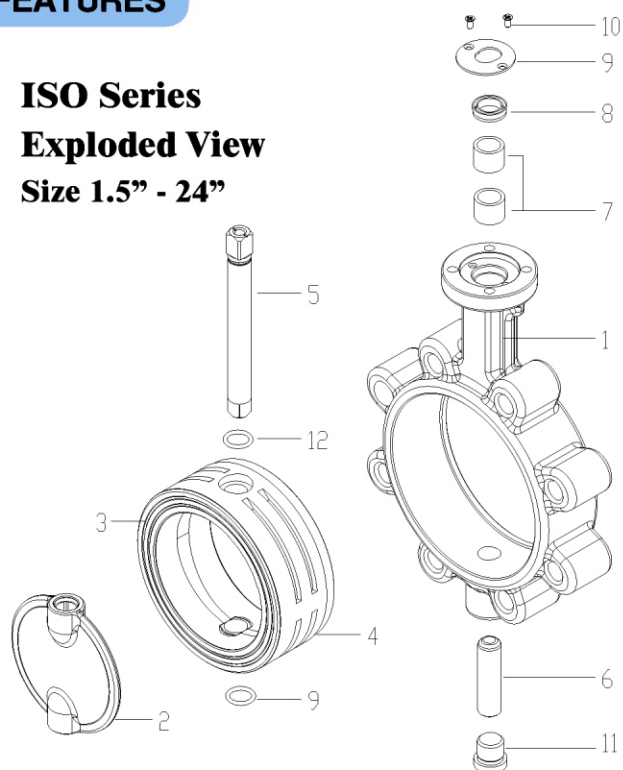
One piece body with long neck allows clearance for flanges and easy insulation.

Primary stem seals are formed by preloaded contact between the disc and seat. A secondary seal is effected by having a stem diameter greater than the stem hole in resilient seat. These seals provide a non-wetted body and stem, eliminating the need for corrosion resistant body material.

Field replaceable, phenolic bonded cartridge is blowout proof, stretch resistant and non-collapsible, making it an ideal seat design for high velocity or vacuum service. Our resilient seat design eliminates the need for flange gaskets.

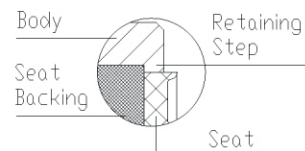
Valve sizes 28" & above are supplied with metal seat back up rings.

ISO Series Exploded View Size 1.5" - 24"



Unique Design for Extreme Pressure Application

Retaining Step machined in valve body prevents a possible seat blow out under extreme pressures



High strength, square drive (1.5" - 24") ensures a positive shaft to disc connection.

Square drive offers direct ISO mounting of gear operator and automation equipment.

Disc floats inside the seat for positive sealing and extended seat life.

No pins or bolts exposed to flow.

A lock plate and two screws mechanically retain the shaft in the body ensuring a blow out proof stem design.

MAX SEAL PERFORMANCE SERIES BUTTERFLY VALVE MODEL NUMBER CODES

Model	Body Material		Disc Material		Stem Material		Seat Material		Operator		Size	
Wafer-511	Ductile Iron	DI	Ductile Iron	DI	Stainless 420	S6	EPDM	E	Lever	L	2	50
	Cast Iron	CI	Stainless 316	SS	Stainless 316	SS	Buna-N	B	Gear	G	3	80
	Stainless Steel	SS	Stainless 304	S4	Stainless 410	S0	VITON	V	Bare stem	N	4	100
Lug-521					17-4PH	S7	TEFLON	T	Actuator	A	6	150
											8	200
											10	250

ORDERING EXAMPLE BY PART NUMBER

Wafer	Ductile Iron	Stainless 316	Stainless 420	EPDM	Lever	4"
Model	Body	Disc	Stem	Seat	Operator	Size
511	- DI	- SS	- SS	- E	- L	- 100

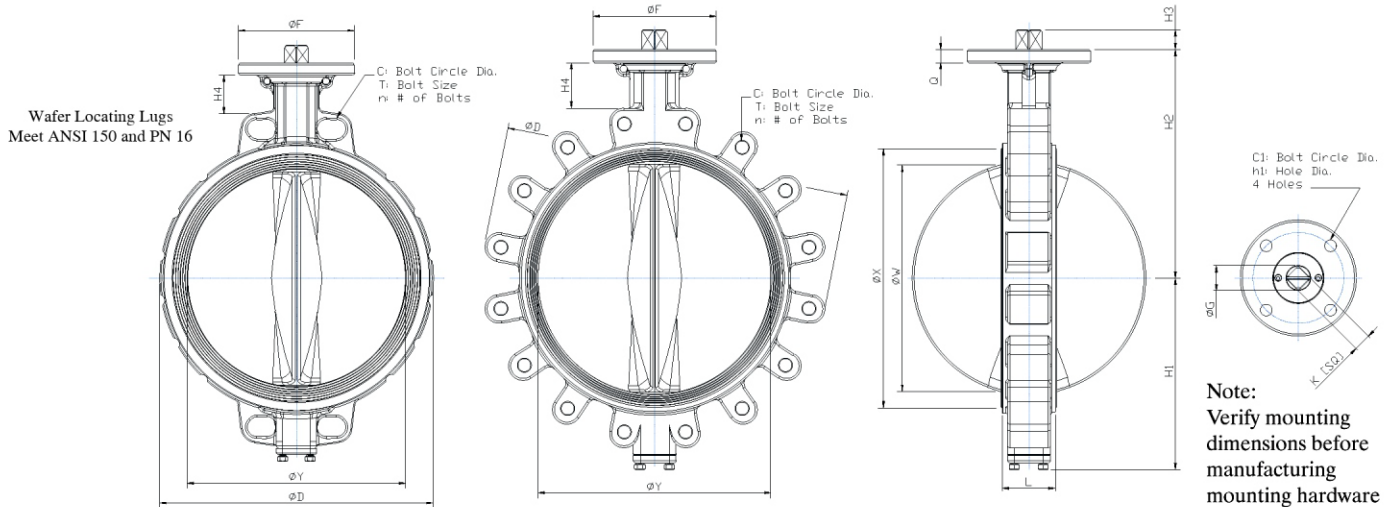
Performance / Design

Accurate and smooth machined profile of disc edge requires minimal deformation of the resilient elastomer liner to achieve a positive seal. The low deformation results in low torque, less wear of the seat liner and increased operational life.

Max-Seal ISO Series Valves Are Bidirectionally Bubble Tight. They Are Marked With An Arrow Indicating The Preferred High Pressure Side

DIMENSIONS / TECHNICAL DATA

ISO Series



ANSI Class 125 Concentric Butterfly Valves

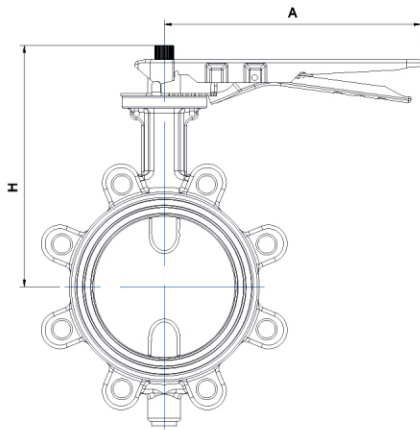
Size	D		F	G	H1	H2	H3	H4		K	L	Q	W	X	Y	Flange Dimension			Mounting Base			Weight Lbs	
	51I	52I						51I	52I							C	T	n	C1	h1	ISO	51I	52I
2"	3.96	4.84	2.56	0.48	2.99	4.96	0.53	1.77	2.16	0.354	1.69	0.39	1.17	3.33	2.08	4.75	5/8-11unc	4	1.97	0.30	F05	4.4	7.3
2.5"	4.53	5.39	2.56	0.56	3.23	5.28	0.53	1.68	2.19	0.433	1.81	0.39	1.69	3.80	2.50	5.50	5/8-11unc	4	1.97	0.30	F05	5.7	9.0
3"	5.03	7.09	2.56	0.56	3.76	5.43	0.53	2.23	3.02	0.433	1.81	0.39	2.60	4.29	3.15	6.00	5/8-11unc	4	1.97	0.30	F05	7.1	10.8
4"	6.14	7.83	2.56	0.56	4.47	6.57	0.53	1.98	1.97	0.433	2.05	0.39	3.31	5.37	3.90	7.50	5/8-11unc	8	1.97	0.30	F05	10.1	18.5
5"	7.48	8.90	3.54	0.71	5.08	7.09	0.69	1.72	2.12	0.55	2.20	0.51	4.50	6.65	4.99	8.50	3/4-10unc	8	2.76	0.39	F07	14.1	19.2
6"	8.43	10.31	3.54	0.71	5.59	7.99	0.69	1.73	2.33	0.67	2.20	0.51	5.60	7.48	5.95	9.50	3/4-10unc	8	2.76	0.39	F07	16.8	24.5
8"	10.55	12.40	3.54	0.87	6.77	8.98	0.81	1.78	2.19	0.67	2.36	0.51	7.46	9.53	7.78	11.75	3/4-10unc	8	2.76	0.39	F10	26.7	39.0
10"	12.76	14.96	4.92	1.11	8.39	10.47	0.96	1.81	2.05	0.87	2.68	0.59	9.39	11.65	9.72	14.25	7/8-9unc	12	4.02	0.47	F10	40	67.5
12"	14.84	16.89	4.92	1.11	9.53	11.46	0.96	1.65	1.72	0.87	3.07	0.59	11.35	13.65	11.73	17.00	7/8-9unc	12	4.02	0.47	F10	57.3	97.7
14"	16.21	19.41	5.91	1.43	10.16	13.07	1.18	2.19	2.61	1.06	3.07	0.67	12.94	15.00	13.35	18.75	1-8unc	12	4.92	0.55	F12	88.2	128
16"	18.55	21.89	5.91	1.43	11.87	14.29	1.18	2.01	1.97	1.06	4.02	0.67	14.75	17.25	15.26	21.25	1-8unc	16	4.92	0.55	F12	123.5	192
18"	20.79	25.08	6.89	1.43	12.70	15.63	1.54	2.16	2.13	1.06	4.49	0.83	16.71	19.24	17.24	22.75	1 1/8-7unc	16	5.51	0.71	F14	174.2	240.3
20"	22.85	27.80	6.89	1.90	14.00	16.73	1.93	1.98	1.87	1.42	5.00	0.83	18.65	21.25	19.24	25.00	1 1/8-7unc	20	5.51	0.71	F14	211.6	293.2
24"	27.08	32.72	8.27	1.90	16.40	19.61	1.93	2.40	2.10	1.42	6.06	0.98	22.51	25.26	23.19	29.50	1 1/4-7unc	20	6.50	0.87	F16	359.4	527.8

- Larger sizes available through 120", consult factory
- **Pressure Ratings:**
1.5"-12" 200 psi; 14"-24" 175 psi
- Lug Body for Dead End Service:
1.5"-6", 150 psi; 8"-24" 125 psi
- Higher Pressure Option:
280 WOG, Sizes 2" - 6"; 230 or 280 WOG, Sizes 8" - 24"
with disc modification & 17-4Ph stem
- Vacuum Service up to 28" Hg
- Max-Seal valves are designed for bubble tight shutoff in either direction of flow. Each valve is factory tested to 110% of their pressure rating.
- Blow out proof stem design
- A heavy duty butterfly valve, designed for ANSI Class 125/150 flanges. These valves comply with MSS-SP25, MSS-SP67 & the requirements of MIL-V-22133C (ship) Type 1, Class A-D
- Valve sizes up to 16" meet API 609; Sizes 18" - 24" meet API 609 also with fine thread drilling
- Positive Valve Position: When the handle is perpendicular to the pipe, the valve is shut. When the handle is parallel to the pipe, the valve is fully open. The orientation of the disc is indicated by a groove at the shaft end that is in line with the disc.

Max-Seal ISO Series offers longer service life, greater reliability, ease of parts replacement and interchangeability of components.

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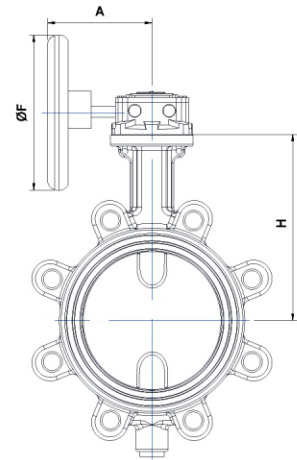
HANDLE AND GEAR OPERATOR DIMENSIONS



ISO Series



Die Cast Aluminum Handles



Lever-Lock 10 Position Type Handle

SIZE	2"	2.5"	3"	4"	5"	6"	8"	10"	12"
H	6.44	6.75	6.91	8.05	8.68	9.59	10.57	12.32	13.31
A	8.66	8.66	8.66	8.66	10.24	10.24	10.24	14.57	14.57

Gear Operator

SIZE	2"	2.5"	3"	4"	5"	6"	8"	10"	12"	14"	16"	18"	20"	24"
H	5.98	6.30	6.46	7.64	8.15	9.06	10.47	11.97	12.95	14.72	16.26	17.60	18.70	21.57
F	3.94	3.94	3.94	4.72	4.72	4.72	11.81	11.81	11.81	11.81	15.75	19.69	19.69	19.69
A	3.90	3.90	3.90	4.53	4.53	4.53	8.66	8.66	8.66	8.15	10.91	14.06	14.06	15.04

VALVE FLOW COEFFICIENTS & TECHNICAL DATA

SEAT TEMPERATURE RANGE

Material	Temperature Range
EPDM-H	5° to 245°F
NBR	15° to 175°F
Natural Rubber	-20° to 175°F
Hypalon	-4° to 165°F
Silicone	-40° to 335°F
FPM	-4° to 335°F
PTFE	-40° to 355°F



Max-Seal Valves Are Ideally Suited for Actuated Applications

ACTUATOR MOUNTING

Max-Seal Offers A broad line of automation systems for precise proportioning or on-off control in either pneumatic or electrically powered units.

Cast mounting flange conforms with ISO 5211. Many actuator sizes can be directly mounted to valve top flange without the need of a bracket

ISO Series Torque Value

These wet seating valve torques are figured for wet service defined as lubricated with clean non-abrasive line media

MAX SEAL Models 51I, 52I Cv Value

SIZE		Angle of Opening								
Inch	mm	10°	20°	30°	40°	50°	60°	70°	80°	90°
1 1/2	40	1	1	5	14	20	37	53	62	72
2	50	1	1	6	16	34	55	83	114	125
2 1/2	65	1	2	13	32	58	90	142	200	249
3	80	4	7	33	63	106	163	249	351	471
4	100	6	16	67	126	204	306	471	693	932
5	125	7	32	98	182	289	449	728	1113	1446
6	150	8	60	151	261	424	668	1140	1791	2251
8	200	26	133	267	468	746	1188	2048	3361	4066
10	250	39	200	390	740	1132	1786	3093	5138	6714
12	300	57	292	572	1079	1652	2604	4510	7750	10302
14	350	138	351	736	1320	2238	3596	5792	10368	12029
16	400	179	459	962	1725	2925	4696	7564	13541	15712
18	450	228	581	1217	2183	3699	5944	9581	17139	19887
20	500	280	718	1503	2695	4566	7337	11819	21158	24551
24	600	403	1033	2162	3881	6576	10566	17020	30469	35354

SIZE		Pressure Differential				
Inch	mm	0 psi	50 psi	100 psi	150 psi	200 psi
1 1/2	40	97	97	106	115	124
2	50	106	106	115	124	133
2 1/2	65	159	177	186	195	204
3	80	212	230	248	265	283
4	100	327	372	389	407	425
5	125	522	602	628	655	681
6	150	841	841	885	929	973
8	200	1239	1268	1332	1416	
10	250	2212	2301	2345	2748	
12	300	2566	2655	2743	2848	
14	350	5398	5929	6991	7611	
16	350	6637	7788	8407	10177	
18	450	7611	8407	10177	11504	
20	500	19956	20885	21770	22655	
24	600	27434	30000	32301	35398	



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Fax: (910) 739-1733
E-Mail: sales@maxsealinc.com



PTFE Lined Butterfly Valves

CHEM-FLO SERIES

PTFE Lined Valves Designed for High Corrosion, High Purity

Model:

25 - Wafer Type
26 - Lug Type

Size Range:

2"-24"

Pressure Rating:

2"-14": 150 PSI
16"-24": 100 PSI

Materials:

Ductile Iron Body
Optional Stainless Steel
And Special Alloys

ISO-5211 Direct
(Actuator Mounting)



Typical Applications

- Fertilizers
- Desalination
- Bio-Technical
- Pulp and Paper
- Textile Industry
- Petro-Chemical
- Food Processing
- Semi-Conductors
- Mining and Steel
- Paint and Pigments
- Pharmaceutical Industry
- Chemical Process Industry

Design Advantages

- 2-Piece Body Design
- Ease of Automation
- Phenolic Backed Seats
- 2-Piece Stem Design
- Epoxy Coated Body
- Low Operating Torque
- Blowout-proof Stem

(910) 738-2866
(910) 739-1733

2-Piece Body - Ideal for Easy Maintenance
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sales@maxsealinc.com

Butterfly Valve - Components/Design Features

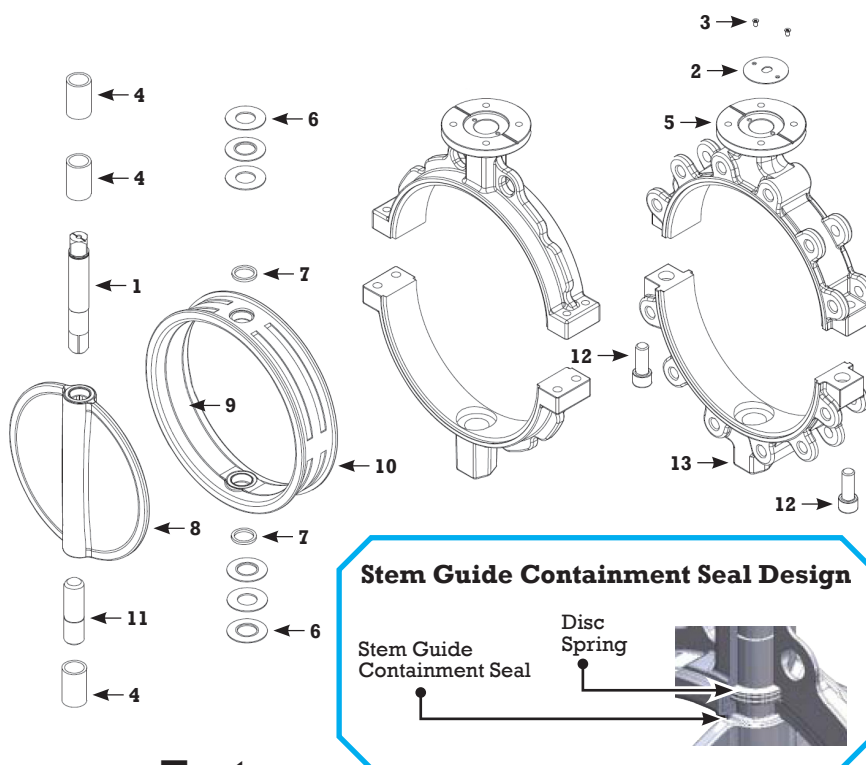
Standard Parts List

No	Part Name	Material	Code	Qty
1	Upper Stem	SS316 17-4PH	SS S7	1
2	Lock Plate	Stainless Steel	SS	1
3	Screws	Stainless Steel	SS	2
4	Bushings	PTFE w/ Graphite	Y	3
5	Upper Body	Ductile Iron A536 Stainless CF8M	DI SS	1
6	Disc Springs	SS316	SS	6
7	Washers	PTFE	T	2
8	Disc	Stainless + PTFE	SS	1
9	Seat	PTFE	T	1
10	Seat Backing	EPDM BUNA Silicone Viton	E N S V	1
11	Lower Stem	SS316 17-4PH	SS S7	1
12	Body Bolts	Stainless Steel	SS	2
13	Lower Body	Ductile Iron A536 Stainless CF8M	DI SS	1

Exploded View
Size 2"-24"

Model 25

Model 26



Design:

- 2"-12" stock; 14"-24" project order
- Disc options: 316SS/PTFE, Ductile Iron/ PTFE, 17-4PH/ PTFE
- Operating pressure 150 psi for 2"-14"; 100 psi for 16"-24"
- International flange compatibility
- Flange connection according to DIN 2501 PN10/16 resp.
- ANSI class 150, with standard grounding connection
- Face-to-face dimensions according to DIN-EN558-1 range 20, ISO 5752 short, BS 5155, and API 609
- Top flange according to ISO 5211, stem to EN12116
- Nearly 2" neck length meets general insulation requirements

Features:

- The Chem-Flo Series valve disc has a minimum 1/8" (3mm) thickness of pure virgin PTFE encapsulated over 316 stainless steel disc
- High strength, square drive ensures a positive shaft to disc connection
- Square drive offers direct ISO mounting of gear operator and automation equipment
- Disc floats inside the seat for positive sealing and extended seat life
- No pins or bolts exposed to flow
- A lock plate and two screws mechanically retain the shaft in the body ensuring a blowout-proof stem design

Max-Seal Performance Series Butterfly Valve Model Number Codes

Model	Body Material		Disc Material		Stem Material		Seat Material		Operator		Size		S/F
Wafer-25 Lug-26	Ductile Iron	DI	PTFE Coated SS	TS	Stainless 316	SS	TEFLON	T	Level	L	2"	50mm	Special Feature
	Stainless 316	SS	Stainless 316	SS	17-4PH	S7	EPDM	E	Gear	G	3"	80mm	
	Alloy 20	A2	Alloy 20	A2			NBR	B	Bare Stem	N	4"	100mm	
	Duplex	DP	Duplex	DP			VITON	V	Actuator	A	6"	150mm	
											8"	200mm	
											10"	250mm	
											12"	300mm	

Performance / Design

Accurate and smooth machined profile of SS disc edge requires minimal deformation of the resilient PTFE liner to achieve a positive seal. The low deformation results in low torque, less wear of the seat liner, and increased operational life.

Max-Seal Chem-Flo Series valves are bidirectionally bubble tight.

Ordering Example by Part Number

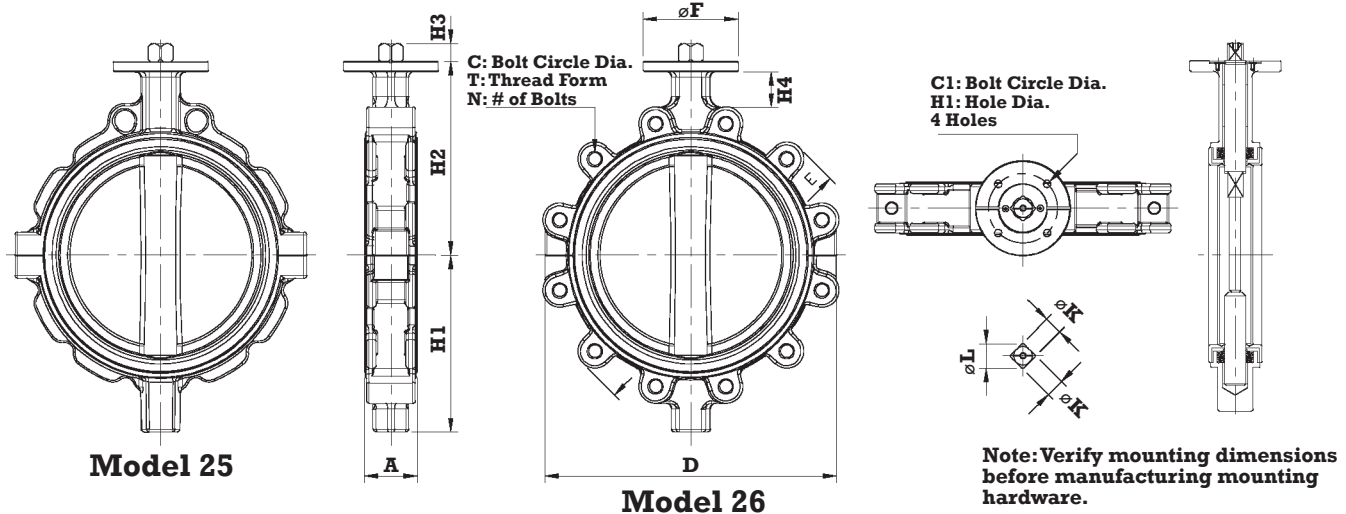
Wafer	Ductile Iron	Stainless 316	Stainless 316	PTFE	Lever	4"
Model	Body	Disc	Stem	Seat	Operator	Size
25	DI	SS	SS	T	L	100

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Dimensions/Technical Data



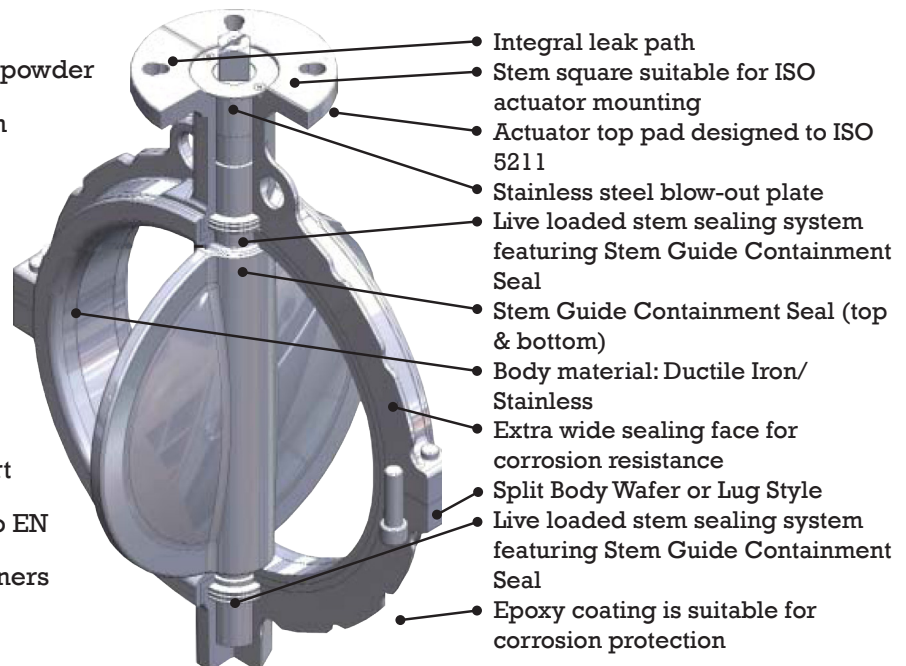
ANSI Class 125 PTFE Lined Butterfly Valves

Size	A	D		E	F	H1		H2		H3	H4	K	L	C	T	n	C1	h1	ISO	wafer	lug
		wafer	lug			wafer	lug	wafer	lug												
2"	1.85	5.08	6.02	5.98	2.56	2.56	2.36	5.12	5.43	0.53	1.85	0.43	0.56	4.75	5/8-11unc	4	1.97	0.28	F05	5.7	8.8
2½"	1.97	5.28	6.10	7.01	2.56	2.76	2.76	5.43	5.59	0.53	1.18	0.43	0.56	5.50	5/8-11unc	4	1.97	0.28	F05	7.1	10.1
3"	1.97	6.26	7.06	7.52	2.56	3.23	3.31	5.35	5.59	0.53	1.18	0.43	0.56	6.00	5/8-11unc	4	1.97	0.28	F05	8.8	11.9
4"	2.19	7.76	8.07	9.02	3.54	3.78	4.02	6.50	6.34	0.69	1.38	0.55	0.71	7.50	5/8-11unc	8	2.76	0.35	F07	14.3	15.9
5"	2.32	8.43	9.45	10.00	3.54	4.72	4.80	6.89	7.09	0.69	1.26	0.55	0.71	8.50	3/4-10unc	8	2.76	0.35	F07	15.4	19.0
6"	2.32	10.00	10.43	10.98	3.54	5.12	5.28	7.48	7.32	0.73	1.57	0.67	0.87	9.50	3/4-10unc	8	2.76	0.35	F07	21.2	25.3
8"	2.48	12.20	12.60	13.50	4.92	6.69	6.50	9.09	9.21	0.96	1.65	0.87	1.11	11.75	3/4-10unc	8	4.02	0.43	F10	32.2	50.7
10"	2.87	14.57	15.16	15.98	4.92	8.66	7.64	10.24	10.75	0.96	1.97	0.87	1.11	14.25	7/8-9unc	12	4.02	0.43	F10	46.3	70.5
12"	3.19	16.65	17.72	19.02	5.51	8.82	8.82	11.30	11.89	1.04	1.97	1.06	1.43	17.00	7/8-9unc	12	4.02	0.43	F10	67.5	88.7

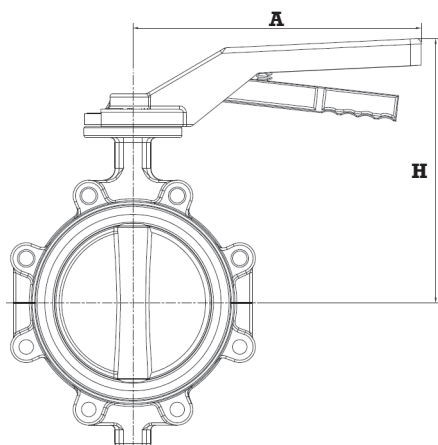
Construction Features

Technical Information

- Standard bodies made of ductile iron with powder coating
- Seat made of high quality plastic PTFE with a minimum thickness of 3mm (0.12") for corrosive or abrasive services
- The steel pressure ring transfers the belleville-spring action and elastomer compression force onto liner and disc hub, providing a bubble-tight stem sealing mechanism for upper and lower stem sealing areas
- Wide, chamfered sealing surface prevents radial cold flow of liner under flange bolting forces, eliminating any need of additional gaskets
- Pressure testing according to DIN 3230 Part 3, EN 12266, API 598
- Material and test certificates according to EN 10204-3.1B
- Spark testing of disc encapsulations and liners according to DIN IEC 243T2



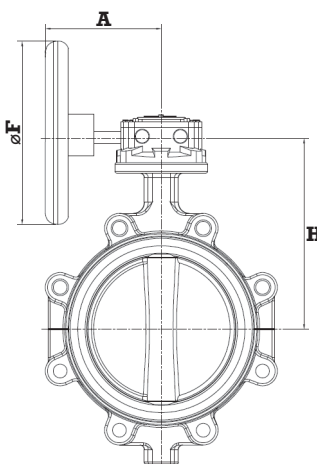
Handle and Gear Operator Dimensions



Chem-Flo Series



Standard Die Cast Aluminum Handles
Optional SS304 Stainless Steel Handles



Level-Lock 10 Position Type Handle

Size	2"	2.5"	3"	4"	5"	6"	8"	10"	12"
H	7.99	8.15	8.15	9.41	10.16	10.39	13.19	14.73	15.87
A	7.68	7.68	7.68	10.59	10.59	10.59	12.99	12.99	12.99

Gear Operator

Size	2"	2.5"	3"	4"	5"	6"	8"	10"	12"
H	5.43	5.59	5.59	6.34	7.09	7.32	9.21	10.75	11.89
F	4.72	4.72	4.72	7.87	7.87	7.87	11.81	11.81	11.81
A	4.25	4.25	4.25	4.69	4.69	4.69	8.78	8.78	8.78

Valve Flow Coefficients & Technical Data

Seat and Backup Temperature Range

Seat Material	Seat Backing Material	Temperature Range	
		Minimum	Maximum
PTFE	NBR	5° F	185° F
	EPDM	-4° F	248° F
	Silicone	-40° F	356° F
	VITON	5° F	356° F

Elastomer backings provide a resilient and uniform pressure onto sealing surface for positive shut-off. Available in Silicon, Viton, EPDM, or Standard EPDM.



Actuator Mounting

Max-Seal has designed the operator mounting top plate to ISO-5211 specifications for direct mounting of manual operators and actuators. Designed to recognize industrial standards, the square stem connection provides a secure connection with most actuators without requiring brackets.

Automation Equipment

Max-Seal offers a wide range of automation products including handles, gear operators, rack and pinion actuators, pneumatic cylinder, and wrench arm assemblies, electric actuators, pneumatic positioners, solenoids, proximity, and limit switches.

Max-Seal Chem-Flo Cv Values

Size		Angle of Opening								
Inch	mm	10°	20°	30°	40°	50°	60°	70°	80°	90°
2	50	1	1	6	16	34	55	83	114	125
2½	65	1	2	13	32	58	90	142	200	249
3	80	4	7	33	63	106	163	249	351	471
4	100	6	16	67	126	204	306	471	693	932
5	125	7	32	98	182	289	449	728	1113	1446
6	150	8	60	151	261	424	668	1140	1791	2251
8	200	26	133	267	468	746	1188	2048	3361	4066
10	250	39	200	390	740	1132	1786	3093	5138	6714
12	300	57	292	572	1079	1652	2604	4510	7750	10302

Chem-Flo Series Torque Values

Size		Pressure Differential			
Inch	mm	0 psi	40 psi	80 psi	145 psi
2	50	248	248	274	283
2½	65	336	345	363	354
3	80	443	460	496	504
4	100	664	690	752	788
5	125	1062	1115	1230	1292
6	150	1328	1398	1584	1682
8	200	2832	3089	3478	3735
10	250	3363	3761	4372	4726
12	300	4691	5257	6195	6717

These wet seating valve torques are figured for wet service defined as lubricated with clean non-abrasive line media.



Max-Seal, Inc.
 4815 West 5th St.
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 Lumberton, NC 28359
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910-738-2866
 910-739-1733
sales@maxsealinc.com



TB-501-22

Special Alloy - **HP** Butterfly Valves

HI-TEK SERIES

Double & Triple Offset
Size Range: 2" - 110"
ANSI Class 150/300
Wafer, Lug and Flanged
Forging and Casting Options

The Hi-Tek Series Specializes in a wide selection of special alloys

- Titanium
- Hastelloy
- Zirconium
- Nickel
- Incoloy
- Duplex
- Monel
- Inconel
- Super Duplex



Automation
Max-Seal offers a
broad line of
Automation Systems
for Precise Proportional
On - Off control in either
Pneumatic or Electrically
powered units.



As a part of the Flo-Tite Group, Max-Seal's High Performance Butterfly Valves are backed by over 35 years of process valve and automation experience.

www.maxsealinc.com

High Performance Double/Triple Offset Eccentric Valve Model Number ID Codes

Model	Pressure Class	Body		Disc		Stem		Seat		Stem Packing		Operator		Size in	Size mm
Double Wafer - BW Flanged - BF	150	316 SS	SS	316 SS	SS	17-4PH	S7	RPTFE	R	Graphite	G	Lever	L	2"	50
	300	WCB	CS					Metal	M	RPTFE	R	Gear	G	3"	80
Triple Wafer - BWT Flanged - BFT	600			<i>SEE Page 16 for all Special Alloy Codes</i>								Bare Stem	N	4"	100
												Actuator	A	6"	150
														8"	200

(Always add "T" for triple offset)

Ordering Example by Part Number

Ordering Example

Model	Pressure Class	Body		Disc		Stem		Seat		Stem Packing		Operator		Size mm	
Wafer	150	316 SS	SS	316 SS	SS	17-4PH	S7	RPTFE	R	Graphite	G	Lever	L	50	
BW	150	SS		SS		S7		R		G		L		50	

DOUBLE OFFSET BUTTERFLY VALVES

Design Features

Design Standards:

Flanged, Wafer, or Lug design for installation between ANSI 150 or 300. API 609, ANSI/ASME B16.34, soft seated.

Body:

One-piece wafer body style or full lug style for dead end service. Both body styles offer bidirectional sealing as standard in conformance with full ASME class 150 and class 300 rating.

Stem: Blow Out Proof Shaft

The high-strength, 17/4 PH stainless steel one-piece stem provides maximum strength for high torque applications.

Stem Seal:

Gland flange assembly is "live loaded" with Belleville Springs. This ensures continuous compression of packing and sealing contact at the stem and body. Rocker shaped gland bridge compensates for uneven adjustments of gland bolts.

Disc:

Standard valve disc shall be CF8M (ASTM 351) or other special alloy. The angled sealing surface allows for quick release from seat which reduces torque and seat wear.

Integrally Cast Travel Position Stop:

Designed to prevent over travel of disc and provides a set point when calibrating automation.

Extended Neck:

Extended neck allows for 2" of pipeline insulation and easy access to stem packing adjustment and actuator mounting.

Top Flange:

The top flange is drilled as per ISO 5211 to accommodate direct mounting of a wide range of actuators.

Seat Retainer Plate:

Shall follow body material and shall conform to the latest revisions of API accommodating spiral wound gaskets to seal with no special requirements. Bolting is located outside the sealing element.

Seat:

Valve seat shall be PTFE, RTFE or MTFE as standard offering. Seat design is free floating and pressure assisted to provide an interference and pressure assisted seal to achieve a positive seal under both low and high pressures in both directions. Fire safe and metal seats are also available.

Bearing:

Max-Seal utilizes a Stainless Steel/Teflon bearing material for soft seated valves. This Material is superior in reducing friction and side thrust and suitable for corrosive applications

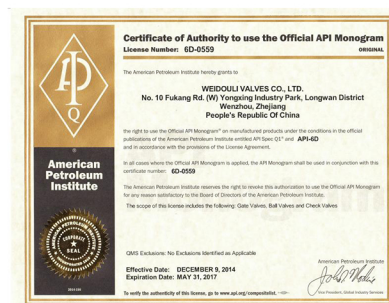
Testing:

All valves are 100% tested per API 598 and documented. Standard testing reports and MTR's can be supplied at any time at no charge. Customized testing can also be performed based on customer's requirements.

Bi-Directional Dead End Service:

All lug valves are suitable for dead-end service to full ASME pressure rating, bidirectionally.

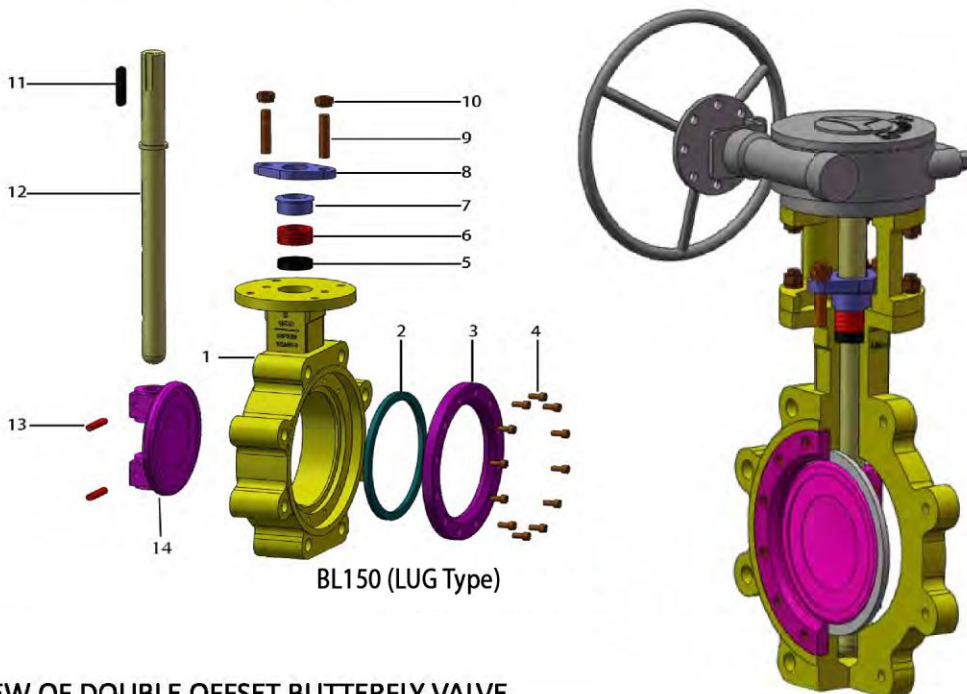
Certifications



Double Offset Valves Construction Specifications

General Highlights

No.	Main Parts
1	Body
2	Seat
3	Seat retainer
4	Screws
5	Packing washer
6	Packing
7	Gland bushing
8	Gland flange
9	Studs
10	Hex nuts
11	Key
12	Stem
13	Pins
14	Disc



EXPLODED VIEW OF DOUBLE OFFSET BUTTERFLY VALVE

Applicable Seat Materials

- PTFE
- RPTFE(15% Glass Filled)
- RPTFE(25% Carbon Filled)
- Viton
- TFM
- PEAK
- METAL
- Other materials can be supplied upon request

Specifications

- Anti-static
- Blow-out proof stem
- V type packing, reliable packing seals
- Zero leakage
- Ends: Wafer, Lug, Flanged
- Uni-directional/Bi-directional sealing
- Operation: Lever, Gear, Electric, Pneumatic actuator
- Bare shaft with ISO 5211 top mounting flange (when specified)

ASME Flanged as citing	
Design	API 609
Testing	API 598
Face to face dimension	API 609
Flange ends dimension	ASME B16.5, ASME B16.47 Series A
Pressure Temperature Rating	ASME B16.34
Visual inspection of casting	MSS-SP-55

Size/Pressure produce range		Operator
Pressure Class	Wafer/Lug/ Flanged	
150LB	2" up to 110"	2"~4" Lever ; 5"~110" Gear
300LB	2" up to 60"	2"~4" Lever; 5"~60" Gear
600LB	On application	

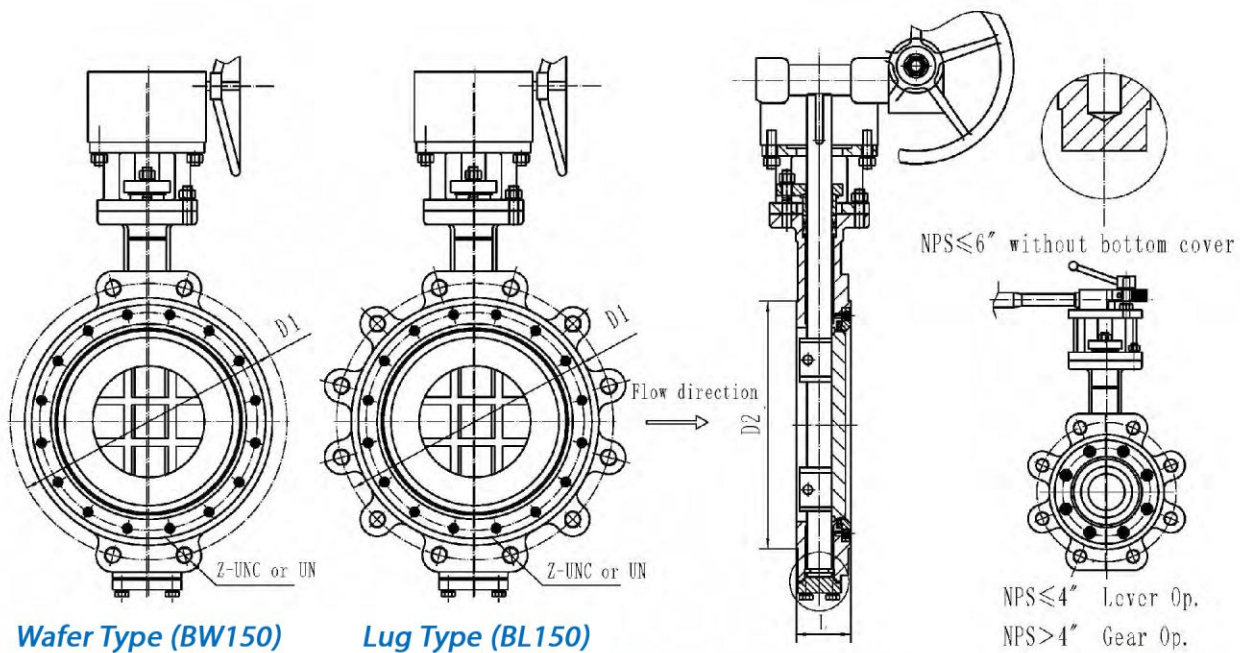
Notes: *Other unspecified standards and sizes are available upon request.

Notes: Above view for size below 6" valves

Size above 8" (Included 8") with additional bottom cover design, other structure same as above view.

Due to continuous development & improvement of our Product range, we reserve the right to alter the dimensions & technical data included in this brochure.

DOUBLE OFFSET BUTTERFLY VALVES *Dimensions / Weights*



Size		ASME 150LB						ASME 300LB				Weights 150LB	
(Inch)	(mm)	L	D1	D2	Z-UNC or UN	Wafer	Lug	L	D1	D2	Z-UNC or UN	Wafer	Lug
2"	50	43	120.5	92	4-UNC5/8"	10	13	43	127	92	8-UNC5/8"	16	20
2-1/2"	65	46	139.5	105	4-UNC5/8"	12	15	46	149	105	8-UNC3/4"	20	24
3"	80	48	152.5	127	4-UNC5/8"	15	24	48	168	127	8-UNC3/4"	24	31
4"	100	54	190.5	157	8-UNC5/8"	34	44	54	200	157	8-UNC3/4"	48	62
5"	125	57	216	186	8-UNC3/4"	68	53	59	235	186	8-UNC3/4"	58	77
6"	150	57	241.5	216	8-UNC3/4"	100	62	59	270	216	12-UNC3/4"	109	101
8"	200	64	298.5	270	8-UNC3/4"	147	92	73	330	270	12-UNC7/8"	162	132
10"	250	71	362	324	12-UNC7/8"			83	387.5	324	16-UN1"		
12"	300	81	432	381	12-UNC7/8"			92	451	381	16-UN1-1/8"		
14"	350	92	476	413	12-UN1"			117	514.5	413	20-UN1-1/8"		
16"	400	102	540	470	16-UN1"			133	571.5	470	20-UN1-1/4"		
18"	450	114	578	533	16-UN1-1/8"			149	628.5	533	24-UN1-1/4"		
20"	500	127	635	584	20-UN1-1/8"			159	686	584	24-UN1-1/4"		
22"	550	127	692	641	20-UN1-1/4"			159	743	641	24-UN1-1/2"		
24"	600	154	749.5	692	20-UN1-1/4"			181	813	692	24-UN1-1/2"		
28"	700	165	863.6	800	28-UN1-1/4"			229	939.8	800	28-UN1-5/8"		
30"	750	241	914.4	857	28-UN1-1/4"			273	997	857	28-UN1-3/4"		
32"	800	241	977.9	914	28-UN1-1/2"			273	1054.1	914	28-UN1-7/8"		
36"	900	241	1085.8	1022	32-UN1-1/2"			286	1168.4	1022	32-UN2"		
40"	1000	300	1200.2	1124	36-UN1-1/2"								
42"	1050	300	1257.3	1194	36-UN1-1/2"								
48"	1200	350	1422.4	1359	44-UN1-1/2"								

Notes: *Other sizes & pressures are available upon request.

*If different material seats are used then torque values will change.

Due to continuous development & improvement of our Product range, we reserve the right to alter the dimensions & technical data included in this brochure.



Applicable Seat Materials

- Metal with Graphite
- Metal with PTFE
- Other materials can be supplied upon request

Specifications

- Anti-static
- Blow-out proof stem
- Fire safe API 607
- V type packing, reliable packing seals
- Zero leakage
- Ends: Wafer, Lug, Double flange.
- Uni-directional/Bi-directional sealing
- Operation: Lever, Gear, Electric, Pneumatic actuator
- Bare shaft with ISO 5211 top mounting flange (when specified)



Lug Type

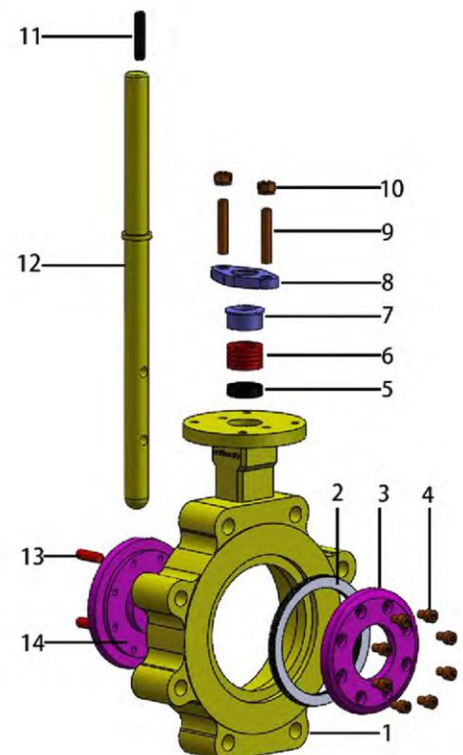
ASME Flanged as citing		Size/Pressure produce range		Operator
Design	API 609	Pressure Class	Wafer/Lug/ Flanged	
Testing	API 598			
Face to face dimension	API 609	150LB	3" up to 80"	3"~4" Lever ; 5"~80" Gear
Flange ends dimension	ASME B16.5 ASME B16.47 Series A	300LB	3" up to 40"	3"~4" Lever ; 5"~40" Gear
Pressure Temperature Rating	ASME B16.34	600LB	On application	
Visual inspection of casting	MSS-SP-55			

No.	Main Parts		
1	Body	8	Gland flange
2	Laminated seat	9	Studs
3	Seat retainer	10	Hex nuts
4	Screws	11	Key
5	Packing washer	12	Stem
6	Packing	13	Pins
7	Gland bushing	14	Disc

All Wafer Type Valves have four tapped lugs for exact & easy installation

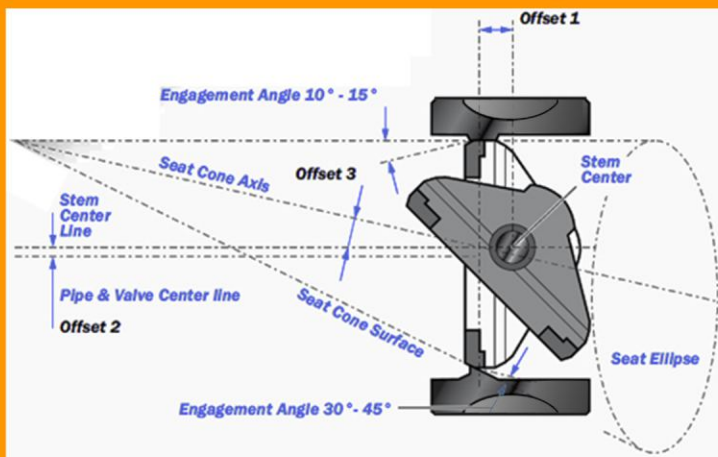
Notes:
*Other unspecified standards and sizes are available upon request.

Due to continuous development & improvement of our Product range, we reserve the right to alter the dimensions & technical data included in this brochure.



Triple eccentric

designed valves have a metal seat which ensures a strong conical sealing principle. The centerline of the cone is rotated away from the valve centerline resulting in an ellipsoidal profile and providing the third offset. There are three offsets to the design; the center of rotation is offset from the tightness surface to allow for a total contact around the complete seal, the center of rotation of the disc is offset from the pipe centerline to allow a seal opening valve, and the seal cone tilting cancels jamming and friction. This allows for complete tightness without seal deformation and the seat-seal interface is completely eliminated ensuring long-sealing life. The design is durable even under extreme temperature fluctuations and pressures drops.



Design Features

The triple offset butterfly valve has been designed to answer the industries demand for an alternate solution to gate valves and ball valves where weight, space, performance and the ability to modulate flow.

Lower weight vs Gate or Globe valve

Zero leakage shut off to API 598

Easy to automate

Ideal for modulating for process control

Body Design

Body is single - piece cast construction, with options of wafer, lug, double flanged, or buttweld ends. Face to face dimensions are available for most international standards.

Stem

One-Piece shaft ensures high pressure containment safety and maximum torque seating integrity

Seat Seal Ring Retainer

The seal ring is clamped rigidly on the disc face by the seal ring retainer. The retainer is made of identical metal as the disc, seal ring and retainer making this a robust, composite unit for bubble tight, bi-directional sealing.



FIG. 1

***Fire Safe Design**

The fire test is conducted according to API 607 Section 5.

Stem Packing

Graphite packing as standard with alternative packing materials and configurations available upon request including live loaded packing, Fugitive Emissions qualified designs are available.

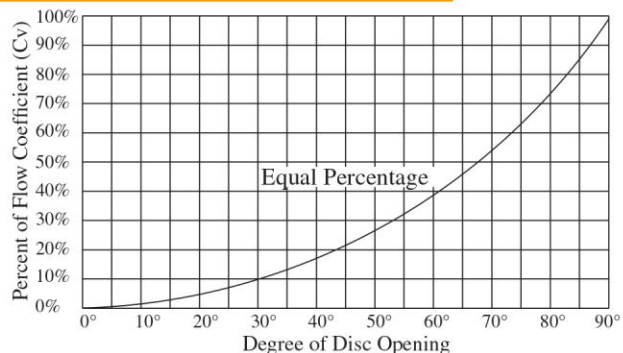
150LB

SIZE		Cv Value										
mm	in	10°	20°	30°	40°	45°	50°	60°	70°	80°	85°	90°
50	2	0	8	22	36	44	51	60	69	72	70	70
65	2.5	2	16	38	61	71	83	109	135	146	152	150
80	3	6	33	62	94	108	118	143	176	208	230	227
100	4	16	58	106	155	178	213	274	349	433	465	473
125	5	20	94	167	230	263	310	391	488	561	604	605
150	6	40	147	242	335	382	422	560	729	925	975	1010
200	8	66	237	368	509	606	712	985	1296	1640	1715	2004
250	10	139	390	595	807	963	1168	1606	2134	2814	3180	3199
300	12	204	548	820	1138	1357	1591	2219	3067	4085	4484	4672
350	14	264	674	972	1386	1658	1994	2840	3925	5164	5828	5947
400	16	384	864	1196	1765	2155	2611	3755	5105	6975	7920	8182
450	18	508	1092	1551	2341	2881	3522	5125	7134	9511	10599	11548
500	20	626	1294	1792	2651	3304	4082	5919	8256	11429	13126	13813
600	24	1047	2251	3178	4563	5543	6568	9277	12932	17093	18328	19021

300LB

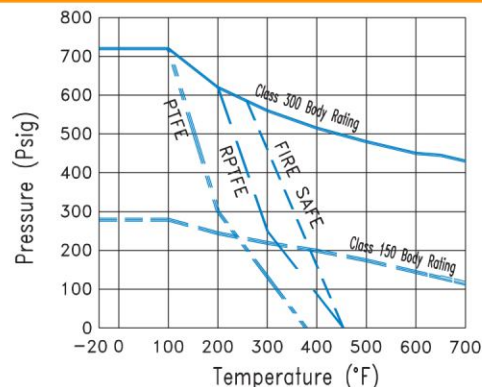
SIZE		Cv Value										
mm	in	10°	20°	30°	40°	45°	50°	60°	70°	80°	85°	90°
80	3	6	33	62	94	108	118	143	176	208	230	227
100	4	16	58	106	155	178	213	274	349	433	465	473
125	5	20	94	167	230	263	310	391	488	561	604	605
150	6	37	137	225	312	355	393	521	678	860	907	939
200	8	62	220	343	473	563	662	916	1206	1525	1595	1864
250	10	129	362	554	750	896	1087	1493	1985	2617	2957	2975
300	12	190	510	762	1059	1262	1480	2064	2852	3799	4170	4345
350	14	246	627	904	1289	1542	1854	2641	3650	4803	5420	5531
400	16	357	803	1112	1642	2004	2428	3492	4748	6487	7365	7609
450	18	473	1015	1442	2177	2679	3275	4766	6634	8845	9857	10739
500	20	583	1204	1667	2466	3073	3797	5504	7678	10629	12207	12846
600	24	974	2093	2956	4244	5155	6108	8627	12027	15897	17045	17689

Flow Data Rated Cv:



The volume of water in the United States gallons per minute that will pass through a given valve opening with a pressure drop of 1 pound per square inch. (water at temp = 60 deg.f)

Pressure Temperature Rating:



Standard Specifications

- Applicable Flange Standard: ANSI B16.5
- Face to Face Dimensions: API 609, MSS SP68, ISO5752
 - Actuator Mounting Flange: ISO 5211
 - Valve Design: MSS SP-68
 - Valve Design: API 609
 - Valve Marking: MSS SP-25
- Valve Testing: API 598 Inspection and Testing
- Valve Testing: MSS SP-61 Testing of Steel Valves
 - Valve Design: ANSI B16.34
- Valve to have Official API Monogram
 - Valve to API ISO 9001:2000
 - Valve to ISO/TS 29001

Dead-End Service

MAX-SEAL lug bodies for dead-end service are offered as standard in full ANSI Class 150 and 300.

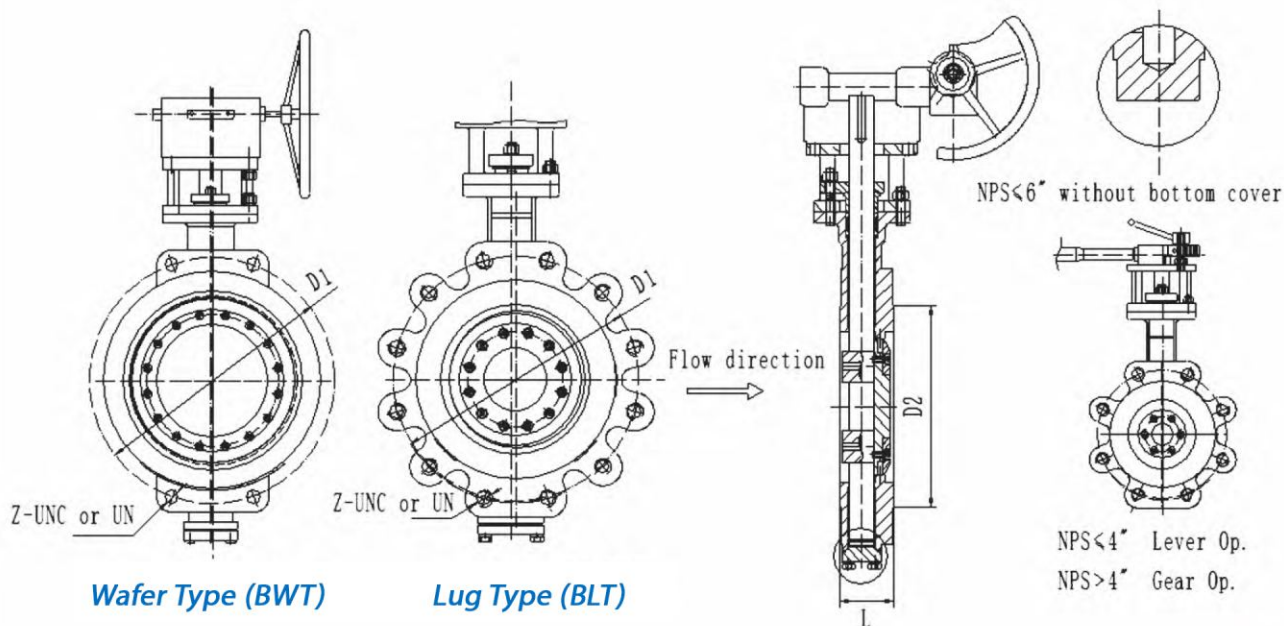
Every Valve is Strength Tested

Shell tested to 150% of rated pressure with the disc open... hydrostatic seat tested for bi-directional positive shutoff without leakage at 110% of rated pressure. We also test for absence of leakage into valve shaft bearing areas. Only valves meeting a positive shut-off standard are approved for shipment.

Vacuum Service

The drop-tight sealing capabilities of MAX-SEAL valves are excellent for vacuum service. Soft seated standard valves are suitable for vacuum service to 20 microns. Denote vacuum service on the order.

TRIPLE OFFSET BUTTERFLY VALVES *Dimensions / Weights*



Size		ASME 150LB				Weights 150LB		ASME 300LB				Weights 300LB	
(Inch)	(mm)	L	D1	D2	Z-UNC or UN	Wafer / Lug		L	D1	D2	Z-UNC or UN	Wafer / Lug	
3"	80	48	152.5	127	4-UNC5/8"	18	24	48	168	127	8-UNC3/4"	26	30
4"	100	54	190.5	157	8-UNC5/8"	26	30	54	200	157	8-UNC3/4"	35	45
5"	125	57	216	186	8-UNC3/4"	46	52	59	235	186	8-UNC3/4"	66	81
6"	150	57	241.5	216	8-UNC3/4"	57	70	59	270	216	12-UNC3/4"	84	100
8"	200	64	298.5	270	8-UNC3/4"	68	84	73	330	270	12-UNC7/8"	106	122
10"	250	71	362	324	12-UNC7/8"	100	122	83	387.5	324	16-UN1"	139	189
12"	300	81	432	381	12-UNC7/8"	147	191	92	451	381	16-UN1-1/8"	242	298
14"	350	92	476	413	12-UN1"			117	514.5	413	20-UN1-1/8"		
16"	400	102	540	470	16-UN1"			133	571.5	470	20-UN1-1/4"		
18"	450	114	578	533	16-UN1-1/8"			149	628.5	533	24-UN1-1/4"		
20"	500	127	635	584	20-UN1-1/8"			159	686	584	24-UN1-1/4"		
24"	600	154	749.5	692	20-UN1-1/4"			181	813	692	24-UN1-1/2"		
28"	700	165	863.6	800	28-UN1-1/4"			229	939.8	800	28-UN1-5/8"		
30"	750	190	914.4	857	28-UN1-1/4"			273	997	857	28-UN1-3/4"		
32"	800	203	977.9	914	28-UN1-1/2"			273	1054.1	914	28-UN1-7/8"		
36"	900	203	1085.8	1022	32-UN1-1/2"			286	1168.4	1022	32-UN2"		
40"	1000	229	1200.2	1124	36-UN1-1/2"								
42"	1050	246	1257.3	1194	36-UN1-1/2"								
48"	1200	276	1422.4	1359	44-UN1-1/2"								

Notes: *Other sizes & pressures are available upon request.

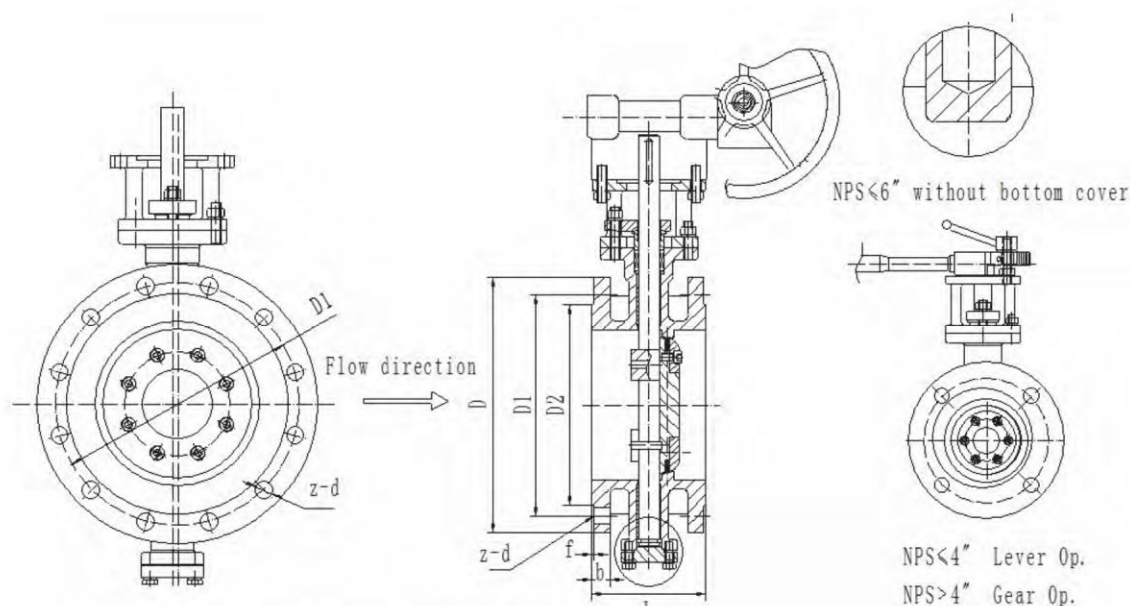
*If different material seats are used then torque values will change.

* CF-Consult Factory for Larger Sizes.

Due to continuous development & improvement of our Product range, we reserve the right to alter the dimensions & technical data included in this brochure.



BFT150 Flanged Ends



Double Flange Type Design

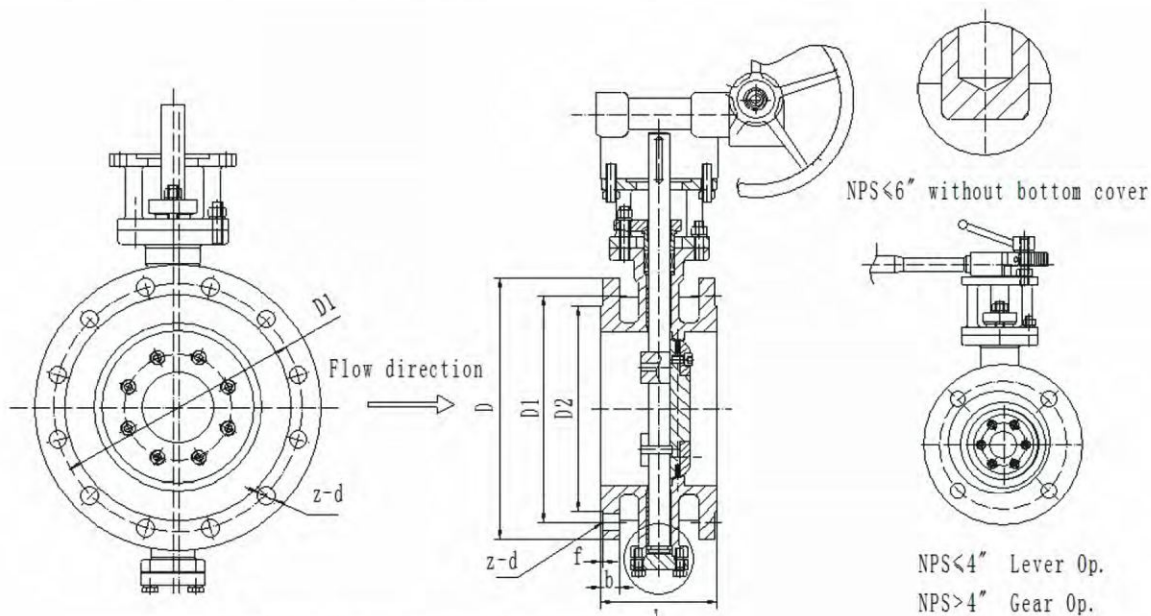
Size		ASME 150LB							Weights 150LB
(Inch)	(mm)	L	D	D1	D2	b	f	z-d	Flanged
3"	80	114	190	152.5	127	19	1.6	4-19	
4"	100	127	229	190.5	157	24	1.6	8-19	
5"	125	140	254	216	186	24	1.6	8-22	
6"	150	140	279	241.5	216	26	1.6	8-22	
8"	200	152	343	298.5	270	29	1.6	8-22	
10"	250	165	406	362	324	31	1.6	12-25	
12"	300	178	483	432	381	32	1.6	12-25	
14"	350	190	533	476	413	35	1.6	12-29	
16"	400	216	597	540	470	37	1.6	16-29	
18"	450	222	635	578	533	40	1.6	16-32	
20"	500	229	698	635	584	43	1.6	20-32	
24"	600	267	813	749.5	692	48	1.6	20-35	
28"	700	292	835	795.3	762	45	2	40-22	
30"	750	318	885	846.1	813	45	2	44-22	
32"	800	318	940	900.1	864	46.6	2	48-22	
36"	900	330	1055	1009.6	972	52.9	2	44-26	
38"	950	410	1125	1070	1022	54.5	2	40-30	
40"	1000	410	1175	1120.8	1080	56.1	2	44-30	
42"	1050	410	1225	1171.6	1130	59.3	2	48-30	
48"	1200	470	1390	1335.1	1280	65.6	2	44-33	

Notes: *Other sizes & pressures are available upon request.

* CF-Consult Factory for Larger Sizes.

Due to continuous development & improvement of our Product range, we reserve the right to alter the dimensions & technical data included in this brochure.

BFT300 Flanged Ends



Double Flange Type (BFT300)

Size		ASME 300LB							Weights 300LB
(Inch)	(mm)	L	D	D1	D2	b	f	z-d	Flanged
3"	80	180	210	168	127	29	1.6	8-22	
4"	100	190	254	200	157	32	1.6	8-22	
5"	125	200	279	235	186	35	1.6	8-22	
6"	150	210	318	270	216	37	1.6	12-22	
8"	200	230	381	330	270	41	1.6	12-25	
10"	250	250	444	387.5	324	48	1.6	16-29	
12"	300	270	521	451	381	51	1.6	16-32	
14"	350	290	584	514.5	413	54	1.6	20-32	
16"	400	310	648	571.5	470	57	1.6	20-35	
18"	450	330	711	628.5	533	60	1.6	24-35	
20"	500	350	775	686	584	64	1.6	24-35	
24"	600	390	914	813	692	70	1.6	24-41	
28"	700	430	920	857.2	787	89.4	2	36-36	
30"	750	450	990	920.8	845	94.1	2	36-39	
32"	800	470	1055	977.9	902	103.6	2	32-42	
36"	900	510	1170	1089	1010	103.6	2	32-45	
38"	950	530	1220	1139.8	1060	111.6	2	36-45	
40"	1000	550	1275	1190.6	1114	116.3	2	40-45	
42"	1050	570	1335	1244.6	1168	119.5	2	36-48	
48"	1200	630	1510	1416	1327	129	2	40-51	

Notes: *Other sizes & pressures are available upon request.

* CF-Consult Factory for Larger Sizes.

Due to continuous development & improvement of our Product range, we reserve the right to alter the dimensions & technical data included in this brochure.



Actuator Mounting Information Double Offset Design

Size		ASME 150LB				ASME 300LB			
(Inch)	(mm)	Torque		Top flange	Shaft ends	Torque		Top flange	Shaft ends STEM
		N.M	in-lb	ISO 5211	□K / d	N.M	in-lb	ISO 5211	□K / d
2"	50	30	265	F07	11mm	50	442	F07	11mm
2-1/2"	65	34	300	F07	14mm	76	672	F07	14mm
3"	80	37	327	F07	14mm	78	690	F07	14mm
4"	100	52	460	F07	14mm	113	1000	F07	17mm
5"	125	118	1044	F10	17mm	289	2557	F10	17mm
6"	150	136	1202	F10	17mm	339	3000	F10	22mm
8"	200	210	1860	F12	22mm	599	5301	F12	27mm
10"	250	464	4107	F12	22mm	1130	10000	F12	27mm
12"	300	600	5310	F14	27mm	1695	15000	F14	34mm
14"	350	980	8674	F14	27mm	2486	22000	F14	36mm
16"	400	1330	11771	F16	34mm	4294	38000	F16	40mm
18"	450	2486	22002	F16	40mm	5085	45000	F16	46mm
20"	500	3925	34740	F25	46mm	6893	61000	F25	50mm
24"	600	4700	41600	F25	φ 70	10735	Consult	F30	φ 90

Notes: *Other sizes & pressures are available upon request.

*Torque value excluded safety factor for reference.

*Up to 20", shaft ends in square type, 24" and above valves' shaft in round type.

MODEL:

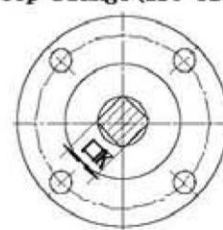
BL150/BL300

BW150/BW300

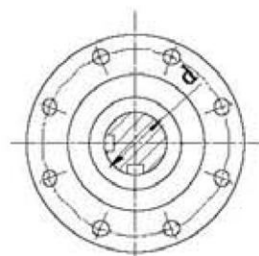
Bare shaft

* CF-Consult Factory for Larger Sizes.

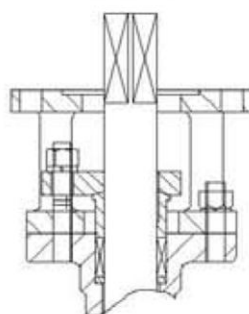
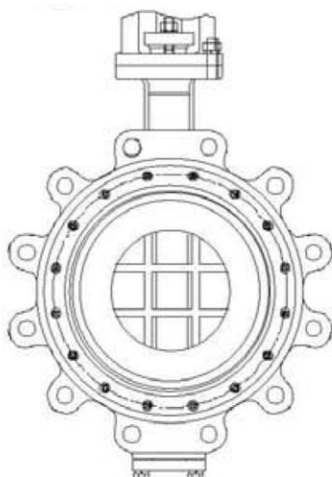
Top flange (ISO 5211)



Square type



Round type



Double offset butterfly valve

Due to continuous development & improvement of our Product range, we reserve the right to alter the dimensions & technical data included in this brochure.

Actuator Mounting Information Triple Offset Design

Size		ASME 150LB				ASME 300LB			
(Inch)	(mm)	Torque		Top flange	Shaft ends	Torque		Top flange	Shaft ends
		N.M	in-lb	ISO 5211	□K / d	N.M	in-lb	ISO 5211	□K / d
3"	80	150	1328	F07	14mm	180	1595	F07	14mm
4"	100	230	2036	F07	14mm	260	2300	F07	17mm
5"	125	250	2212	F10	17mm	380	3363	F10	17mm
6"	150	300	2655	F10	17mm	525	4646	F10	22mm
8"	200	410	3629	F12	22mm	1040	9200	F12	27mm
10"	250	630	5576	F12	22mm	1990	17610	F12	27mm
12"	300	1130	10001	F14	27mm	3125	27660	F14	34mm
14"	350	1740	15400	F14	27mm	4600	40710	F14	36mm
16"	400	2810	24870	F16	34mm	6950	61510	F16	40mm
18"	450	3180	28145	F16	40mm	8750	77444	F16	46mm
20"	500	5500	48680	F25	46mm	13000	115060	F25	50mm
24"	600	7350	65052	F25	φ 70	20750	Consult	F30	φ 90

Notes: *Other sizes & pressures are available upon request.

*Torque value excluded safety factor for reference.

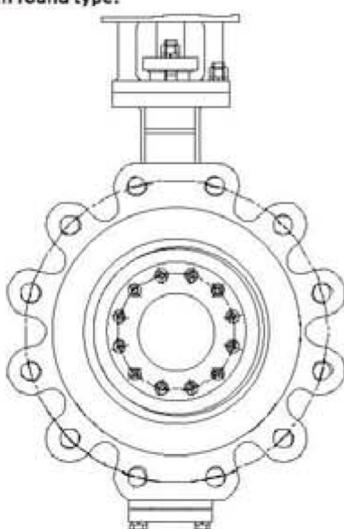
*Up to 20", shaft ends in square type, 24" and above valves' shaft in round type.

MODEL:

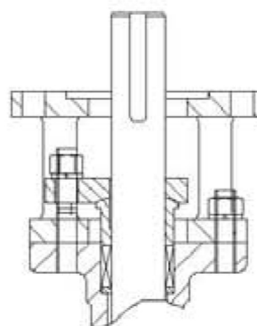
BWT150/BWT300

BLT150/BLT300

* CF-Consult Factory for Larger Sizes.

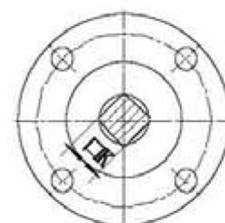


Bare shaft

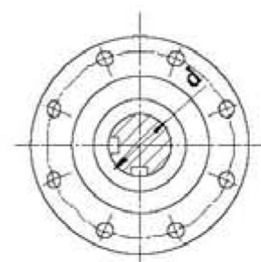


Triple offset butterfly valve

Top flange (ISO 5211)



Square type



Round type

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PRODUCT FIELD

Petroleum Industry

The petroleum industry, also known as the oil industry or the oil patch, includes the global processes of exploration, extraction, refining, transporting (often by oil tankers and pipelines), and marketing manufacturing of petroleum products. MSI designed duplex, ali, bronze, and titanium valves are ideal products for the downstream and upstream pipe requirements.

Coal Chemistry

Coal Chemistry includes coal coking, gasification, liquification, coal refinery, and etc. MSI designed valves are often used for coal coking and gasification.

Organic Chemistry

An organic compound is virtually any chemical compound that contains carbon, although a consensus definition remains elusive and likely arbitrary. Max-Seal valves perform outstandingly on such applications as acetic acid, PTA, alkylaton, cyclohexanone, BDO, and sec-butyl acetate.

Inorganic Chemistry

Inorganic chemistry deals with the synthesis and behavior of inorganic and organometallic compounds. This field covers all chemical compounds except the myriad organic compounds (carbon based compounds, usually containing C-H bonds), which are the subjects of organic chemistry.

New Energy

Due to rapid world growth, energy consumption is increasing. Also energy supply and the demand gap is increasing as well. Therefore, development of new energy becomes the main subjects for all around the world. New energy is based on new technology, system development, and utilization of renewable energy, such as nuclear energy, solar energy, ocean energy and so on.

Environment Water Treatment

Water treatment is any process that makes water more acceptable for a specific end use. The end use may be drinking, industrial water supply, irrigation, river flow maintenance, water recreation, or many other uses, including being safely returned to the environment. Water treatment removes contaminants and undesirable components or reduces their concentration so that the water becomes fit for its desired end use.

TSI: ChemLite Plus (LIBS)

ChemLite Plus is TSI's newest handheld LIBS metals analyser. Units are designed to be accurate and fast, with one to two second readings and eye-safe, Class 1M lasers. Because there's no radiation, there are no regulation requirements. Compared to XRF units, ChemLite is easy and safe for any operator. Additionally, ChemLite analysers have the largest laser spot size available, and a built-in cleaning mode. ChemLite guns identify Al, Mg, Ti, Fe, Ni, and Cu alloys, and are able to separate close Al alloys that XRF cannot. TSI LIBS technology can also detect tramp elements, like Li and Be, down to 1 ppm and can measure copper alloys.



Special Testing

Available for all alloys consult factory for additional information.

EXOTIC ALLOY MATERIAL SERIES

Common		Forging	Casting	Service Application
Designation		Spec	Spec	
ID CODES				
Alloy 20	A20	B462 N08020	A351 CN7M	An austenitic stainless for sulfuric acid corrosion environments. Resists intergranular corrosion as welded. Resistant to chloride and polythionic acid stress corrosion cracking.
Titanium Gr.2	T02	B381 Gr. F-2	B367 Gr. C-2	Good resistance to corrosion together with low specific weight. Widely applied in the chlor-alkali industry, soda industry, the pharmaceutical industry, fertilizer industry, nitric acid industry fields etc. Best choose for paper and pulp application.
Titanium Gr.3	TI3	B381 Gr. F-3	B367 Gr. C-3	
Titanium Gr.5	TI5	B381 Gr. F-5	B367 Gr. C-5	
Titanium Gr.6	TI6	B381 Gr. F-6	B367 Gr. C-6	
Titanium Gr.12	T12	B381 Gr. F-12	B367 Gr. C-12	
Titanium Pd7B	TI8	B381 Gr. F-7	B367 Pd7B	
Nickel 200	N20	B160 N02200	A494 CZ100	Used in high temperature thick alkali corrosive medium condition.
Nickel 201	N21	B160 N02201		
Monel 400	M40	B564 N04400	A494 M35-1/ M35-C	For corrosive service such as acids, alkalies, salt solutions.
Monel K500	M50	B865 N05500		Mainly used in hydrogen fluoride gas and hydrofluoric acid solution condition.
Inconel 600	I60	B564 N06600	A494 CY40	For high temperature service, used for nuclear applications.
Inconel 625	I62	B564 N06625	A494 CW6MC	
Incoloy 800	I80	B564 N08800	A351 CT15C	
Incoloy 825	I82	B564 N08825	A494 CU5MCuC	
Hastelloy B	HB1	B335 N10001	A494 N12MV	Hastelloy super alloys are effective under high-temperature, high-stress service in a moderately to severely corrosive, and/or erosion-prone environment where more common and less expensive iron-based alloys would fail. This includes the pressure vessels of some nuclear reactors, chemical reactors, distillation equipment, and pipes and valves in the chemical industry.
Hastelloy B-2	HB2	B462 N10665	A494 N7M	
Hastelloy C276	HC6	B564 N10276	A494 CW12MW/ CW6M	
Hastelloy C-22	HC2	B564 N06022	A494 CX2MW	
Hastelloy C-4	HC4	B574 N06455	A494 CW2M	
Hastelloy G	HLG	B462 N06007		
Hastelloy G30	HG3	B462 N06030		
Zirconium 702	Z02	B493 R60702	B752 702C	Outstanding corrosion resistance to hydrochloric acid, sulfuric acid, acetic acid, applicable for any density alkaline solution.
Zirconium 705	Z05	B493 R60705	B752 705C	

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INTERNATIONAL VALVE TECHNOLOGIES

One Source Where Great Valves and Brands Unite!



Max-Seal offers a Complete Automation Package of Pneumatic, Hydraulic & Electric Actuators as well as Accessories.

———— ***We Also Offer The Following*** ————
———— ***Valve Types in Special Alloys.*** ————



Knife gate



Globe/Gate



Check



Plug



*State of The Art Double Offset
Butterfly Valve Design*

**Air-Con's
Easy Vane
Actuator**

**IDEAL FOR
MODULATING
CONTROL VALVES**

Tri-Max Series



Class 150/ Class 300

Size Range: 2" - 48"

BL 631/731 and BW 631/731

CRNs Available

Double Offset High Performance Butterfly Valve

sales@maxsealinc.com

www.MAXSEALINC.com

910-738-2866



High Performance Double Offset Butterfly Valve

Type : Wafer, Lug, Flanged

Size : 2" ~ 48"

DN50~DN1200

Pressure Rating : Class 150, Class 300, JIS10K, JIS16K
PN10, PN16, PN20, PN25, PN40, PN64,

Temperature Rating : -27°F ~ 1112°F
-29°C ~ 600°C

Patented Floating Seat Retainer

Bi-directional Zero Leakage

Low Fugitive Emission System

Fire Safe : Compliance with API 607

High Cycle Life

Flo-Tite/Max-Seal 631/731 Series High Performance Butterfly Valves, serving Multi-National end users in a wide range of applications in many industries including:

- | | | |
|-----------------------------|----------------------------|---------------------------------------|
| 1. Chemical & petrochemical | 5. Food industries | 9. Steel & iron industries |
| 2. Power generation plants | 6. LNG, HRSG industries | 10. Pulp & paper plants |
| 3. Ship building industries | 7. Oil refinery industries | 11. Coal & mining industries |
| 4. Fiber industries | 8. Desalination industries | 12. Higher Pressure HVAC Applications |

HIGH PERFORMANCE BUTTERFLY VALVE MODEL NUMBER CODES

Model	Pressure Class		Body Material		Disc Material		Stem Material		Seat Material		Stem Seal		Operator	
Wafer-BW LUG-BL	150	631	316SS	SS	316SS	SS	316SS	SS	RPTFE	R	PTFE	T	Lever	L
	300	731	WCB	CS	Duplex	DP	304SS	S4	PTFE	T	Graphite	G	Gear	G
	600	830	Duplex	DP	Alloy 20	A2	17-4PH	S7	Metal	M			Bare Stem	N
							Duplex	DP	Fire Safe	F			Actuator	A

ORDERING EXAMPLE BY PART NUMBER

Wafer	Class 150	316SS	316SS	17-4ph	RPTFE	Graphite	Lever
Model	Pressure Class	Body	Disc	Stem	Seat	Stem Seal	Operator
BW	631	SS	SS	S7	R	G	L

For Complete bill of materials see page 6



DESIGN SPECIFICATIONS

STANDARDS OF COMPLIANCE

Body Style : 631/731 wafer and Lug models
Rating : ANSI Class 150/300
Applicable Flange Standard : ANSI B16.5
Valve Design : ASME B16.34, MSS SP-68
Anti-Blowout : API 609
Face to Face : API 609, MSS-SP-68, ISO 5752
Low Fugitive Emission
Gland Packing System : MSS-SP-143, DIN 3780
Fire Safe : API 607-6th
Testing : API 598, ISO 5708, MSS-SP- 258, API 60913
Leakage : Soft Seat class, Bubble Tight
ISO Mounting : ISO 5211
Pressure-Temperature Rating : API 609 & ASME B16.34
Suitable Flanges
 ANSI: 150, 300 DIN: PN10, 16, 20, 25, 40, & 50
 JIS: 10K, 16K, 20K, 30K, & 40K
 Valve Materials: MEET NACE MR0175

COMPANY PROFILE

The Tri-Max is a heavy industrial, precisely operating valve. It was founded by Max-Seal and one of our Taiwanese partners with over 40 years of industrial experience and holds TUV, LR, SGS certificates and patents that were issued by authorities such as ISO 9001, CE Mark, API, APU, PED-H.

As a manufacturer, we specialize in manufacturing High Performance Double-Offset Butterfly Valves, Triple-Offset Metal Seated Butterfly Valves, high temperature valves, cryogenic valves, large control valves, field application consulting, ensuring a long life cycle for our valves.

Our team members are experts in the field of chemistry, petrochemical, pulp and paper, thermal power plants, air separation equipment, water treatment, LNG, nuclear powers, and aerospace industry. We have supplied the Tri-Max to Linde AE, US exotic oil Natural Gas (GE Oil & Gas), Brazil Braskem, Taiwan EVA AIR, China Steel, Dairen Chemical Corporation and other international companies.

Max-Seal's core valves are to deliver value to customers by providing high quality valves. By using PTC Creo Parametric CAD, advanced large scale CNC machines, a stable electronic quality control system. We are able to deliver a product with excellent performance, low torque, low sound levels, and a 2 million times ultra-high-cycle butterfly valve. Max-Seal is confident that we are one of the best butterfly valve manufacturers in the world.

Certifications

	Fugitive Emission:TUV ISO 15848-1	
	ISO 9001:2008	
	CE/PED Module H 2014/68/EU	
	CE/PED Module H 2014/68/EU	
	Fire Safe - ISO 10497:2010	
	Fire Safe - API 607:2010	
	Anti-Loose Lever Operator Ring Certificate Of Patent	
	Reliable Gear Operator Certificate Of Patent	
	Screwless Valve Retainer Ring Certificate Of Patent	

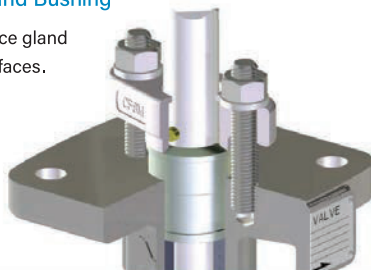
Low Fugitive Emission Gland Packing System

Compliant with latest DIN 3780 and MSS SP-143

Gland Flange and Gland Bushing

A fully adjustable two-piece gland with spherical mating surfaces.

ISO-5211 Mounting



Size Range:
 2" - 44"
 ANSI Class:
 150/300



**Exotic Alloy Materials Available
Consult Factory.**

Long Gland Bush for Positioning

This long gland bush ensures the gland flange is always kept in the center while adjusting packing gland.

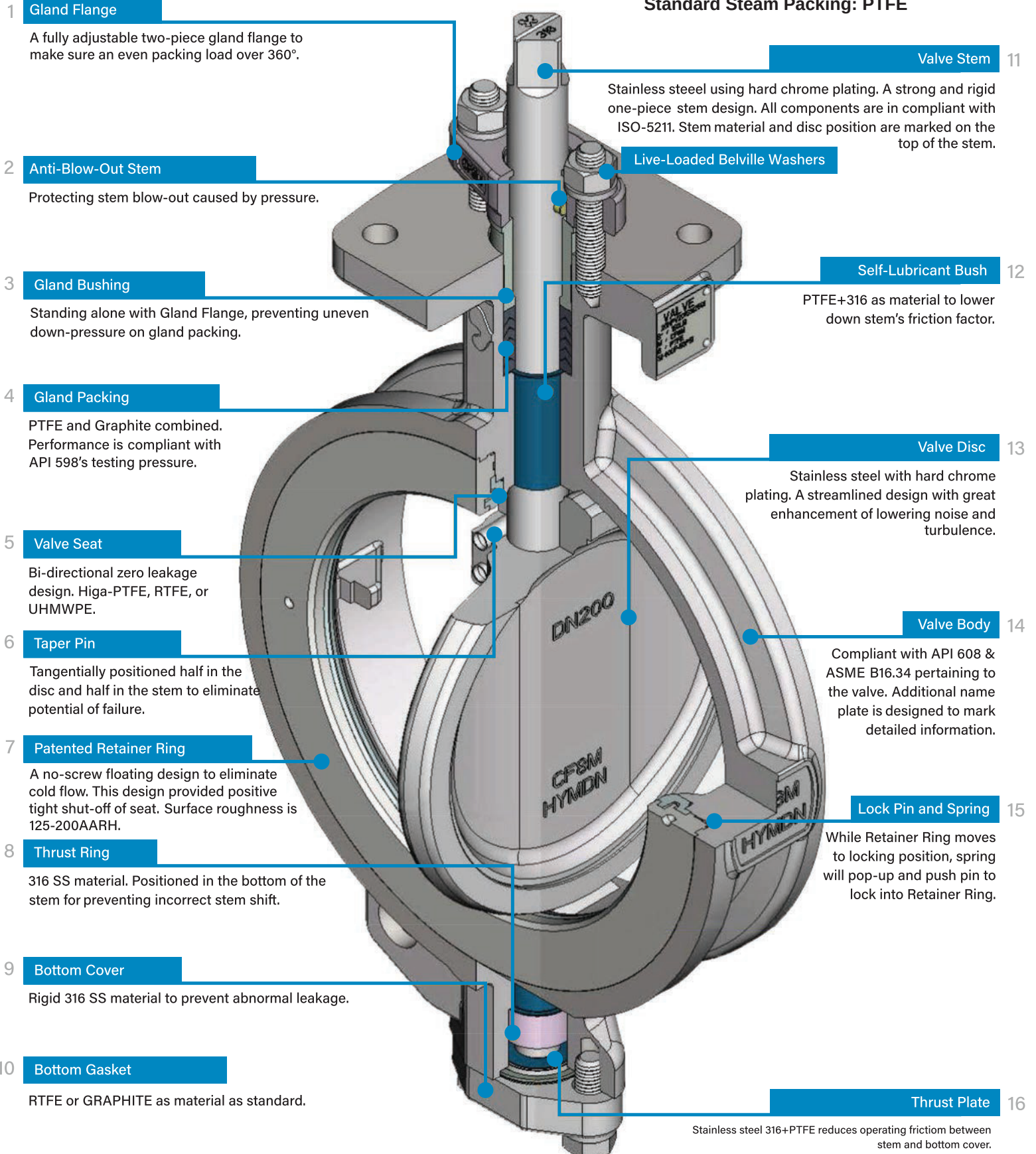
Preventing the gland bush from rubbing and jamming with stem.



VALVE DESIGN FEATURES

Flo-Tite and Max-Seal's high performance butterfly were introduced in 1987. The Max-Seal valve is the result of years of experience in design and manufacture of ball and butterfly valves.

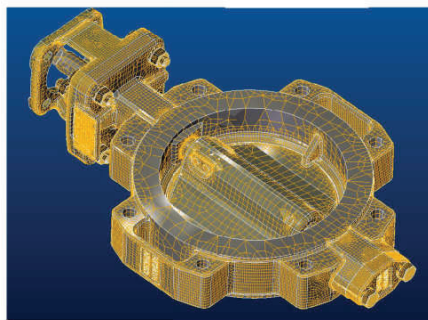
Standard Seat: RPTFE
Standard Stem Packing: PTFE



UNIQUE DESIGN FEATURES

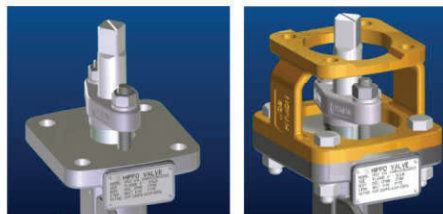
Valve Body

Max-Seal's HP Valves are designed 100% compliant with API 609 and ASME B16.34. Utilizing PTC Creo Parametric (Pro/E) Computer-added-design in every component and results in the reliability.



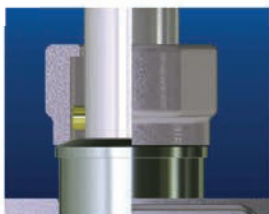
Top Mounting

Compliant with ISO 5211. York designed with draining system for outdoor service.



Anti-Blow-Out Stem and Anti-Electrostatic System

An anti-blow-out design and anti-electrostatic sPste as standard are **compliant with** API 609 and ATEX.



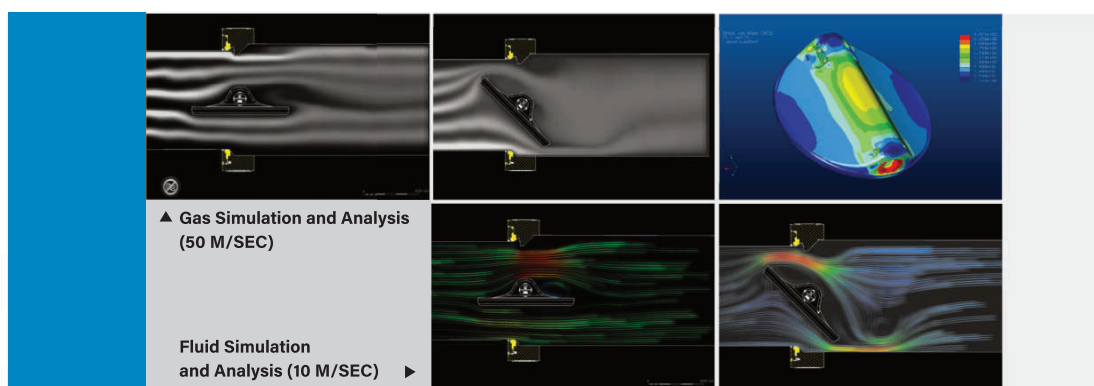
Model:BL631-SS-SS	Rating:CL150
Size: 4 Inch	Trim:S7-R-T-N
Body:CF8M	Disc:CF8M
Seat:RTFE	
SN: H22062404-1 / PO#JH10608	
www.maxsealinc.com API#609-0009	

Name Plate Marking

Max-Seal's tagging system is compliant with MSS-SP-25 & API 609.

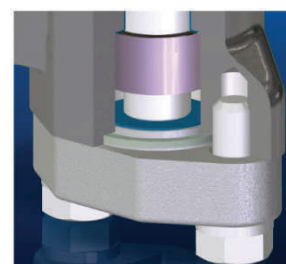
Valve Disc

The valve disc uses stainless steel with computer-added PTC Creo Parametric software to analyze stress performance to achieve API 598. Based on advance 3D CAD simulation. Max-Seal developed a streamlined disc with lower noise and turbulence. Meanwhile, all our disc and stem surfaces are hard chrome plated. This feature significantly enlarges disc performance of anti-rubbing and anti-shocking which results in better life cycle.



Patented Retainer Ring

During installation, screwing this ring into internal tooth of the valve body, then a stainless-steel spring catches and the PTFE pin will pop-up to fix retainer ring and valve body in the correct position. This design enlarges the flange-gasket's contact surface, which reduces installation errors.



Thrust Ring for Positioning

A Rigid Thrust Ring keeps stem always in an accurate position.

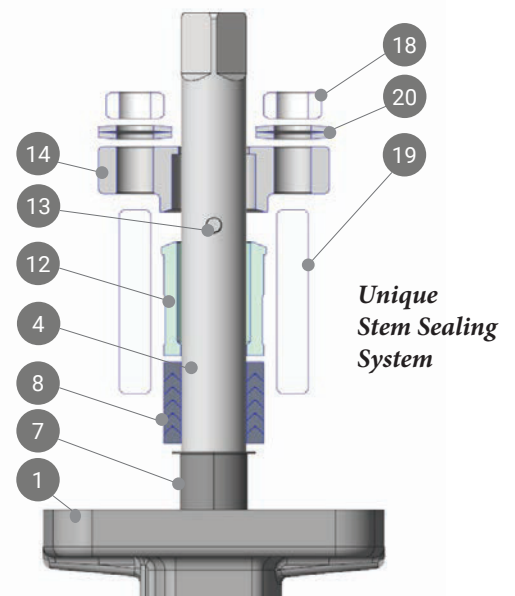
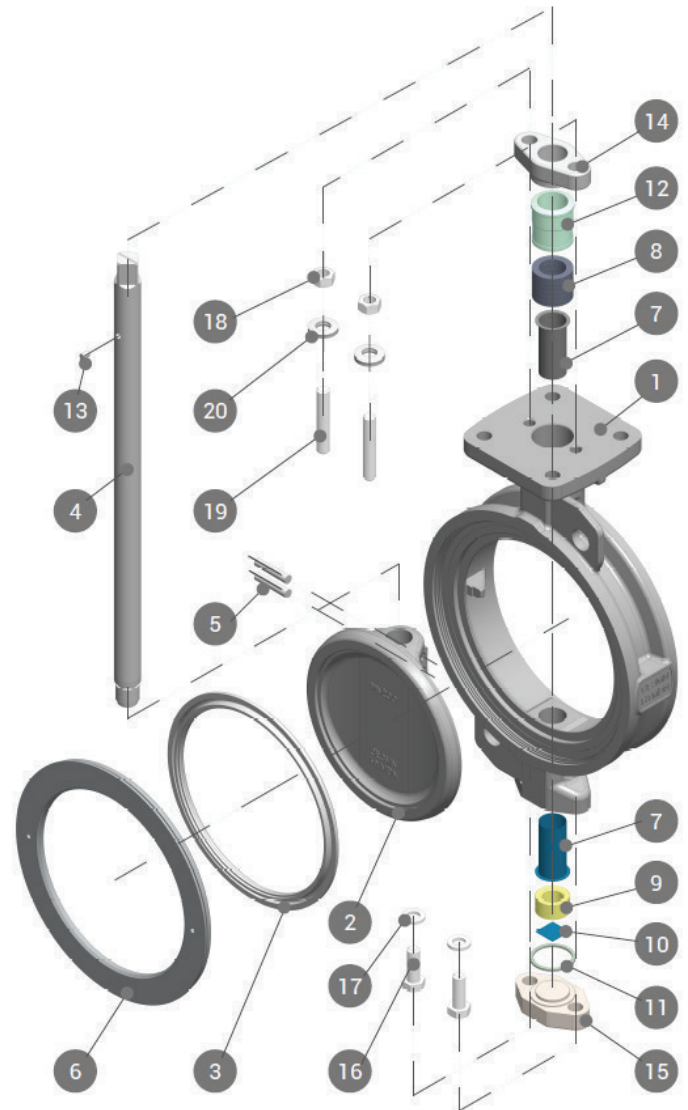


Exploded View

ITEM	NAME	MATERIAL		
1	Body	A216 Gr. WCB	A351 Gr. CF8	A351 Gr. CF8M
2	Disc	A351 Gr. CF8		A351 Gr. CF8M
3	Seat	PTFE / MPTFE / RTFE / Metal Seat (Inconel)		
4	Stem	A182 Gr. F6A	A1 . F304	A182 Gr. F316
5	Taper Pin	A182 Gr. F316L		
6	Retainer Ring	A351 Gr. CF8		A3 . CF8M
7	Stem Bushing	B-Woven Fabric Metal		
8	Gland Packing	PTFE/Graphite	TFE	
9	Thrust Ring	A351 Gr. CF8M		
10	Thrust Plate	B-Woven Fabric Metal		
11	Gasket	PTFE	TFE	GRA TE
12	Gland Bushing	A351 Gr. CF8M		
13	Anti-Blow-Out Pin	A182 Gr. F316		
14	Gland Flange	A216 Gr. WCB	A351-CF8	
15	Bottom Cover	A216 Gr. WCB	A351 Gr. CF8	A351 Gr. CF8M
16	BOLT	304 SS		
17	WASHER	A240 Gr. 304		
18	NUT	304 SS		
19	STUD	304 SS		
20	BELLEVILLE SPRINGS	A240 Gr. 304		

Consult Factory for Options

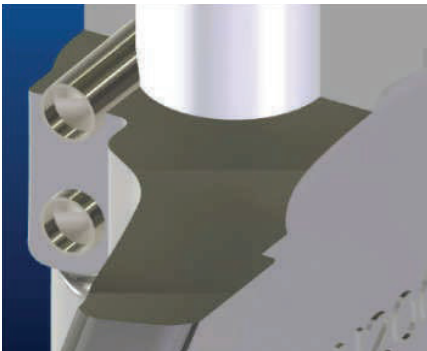
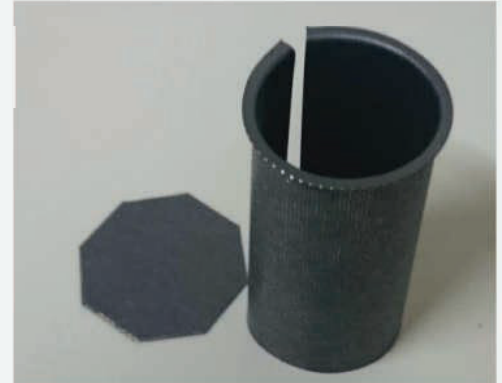
Other Seat Options: PEEK, UHMWPE ,S-TEK



State of the Art Designs

Self-Lubricant Bushing

Uses RTFE+S.S 316 stem bushing. Has excellent working temperature, strength rating, and low friction factor. Maintains good seat sealing capability even after high-cycle operations.



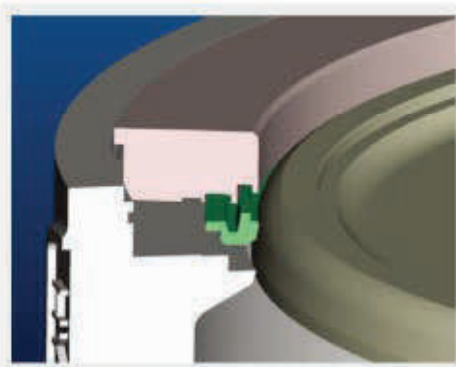
Taper Pin

Disc taper pins are tangentially positioned in the disc and half in the stem, placing them in compression rather than shear, which eliminates potential of failure. This method is 3 times stronger than traditional shear way.

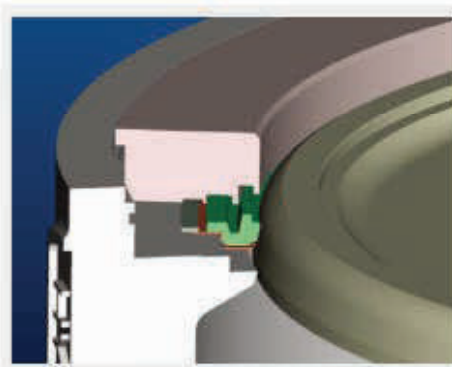
Valve Seat

Max-Seal's Tri-Max Series design offers several types of seats such as: Soft Seat, Fire-Safe and Metal Seat. Pressure-Temperature Rating is compliant with API 609 using reliable section and corresponding floating seat to achieve bi-directional, drop-tight zero leakage closure throughout all pressure ranges, as well as full rated differential pressure. This design reduces rubbing and friction between disc and seat which significantly results in longer life cycle. With Higa-PTFE, this Series can keep 285 PSI bi-directional zero leakage after 100,000 times of operations and it will even go higher while valve is working in a vacuum environment.

Comparing to general PTFE, Higa-PTFE has a 2.5 times higher Load-Deformation-Rate 1.5-4 times higher in Acid Alkaline Permeability. PTFE, RTFE, UHMWPE are available as well.



< Standard Type >



< Fire-Safe Type >

DIMENSIONAL DATA - 1

Lug Style

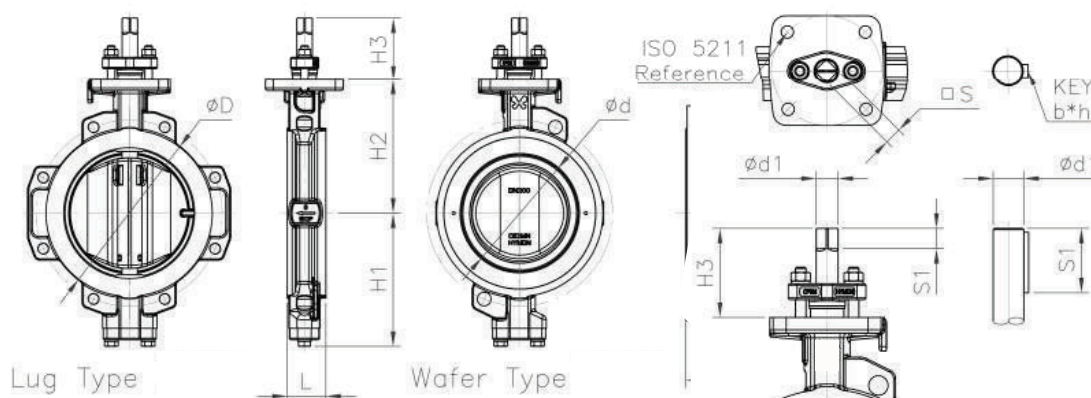
BL 631

BL731

Wafer Style

BW631

BW731



150LB

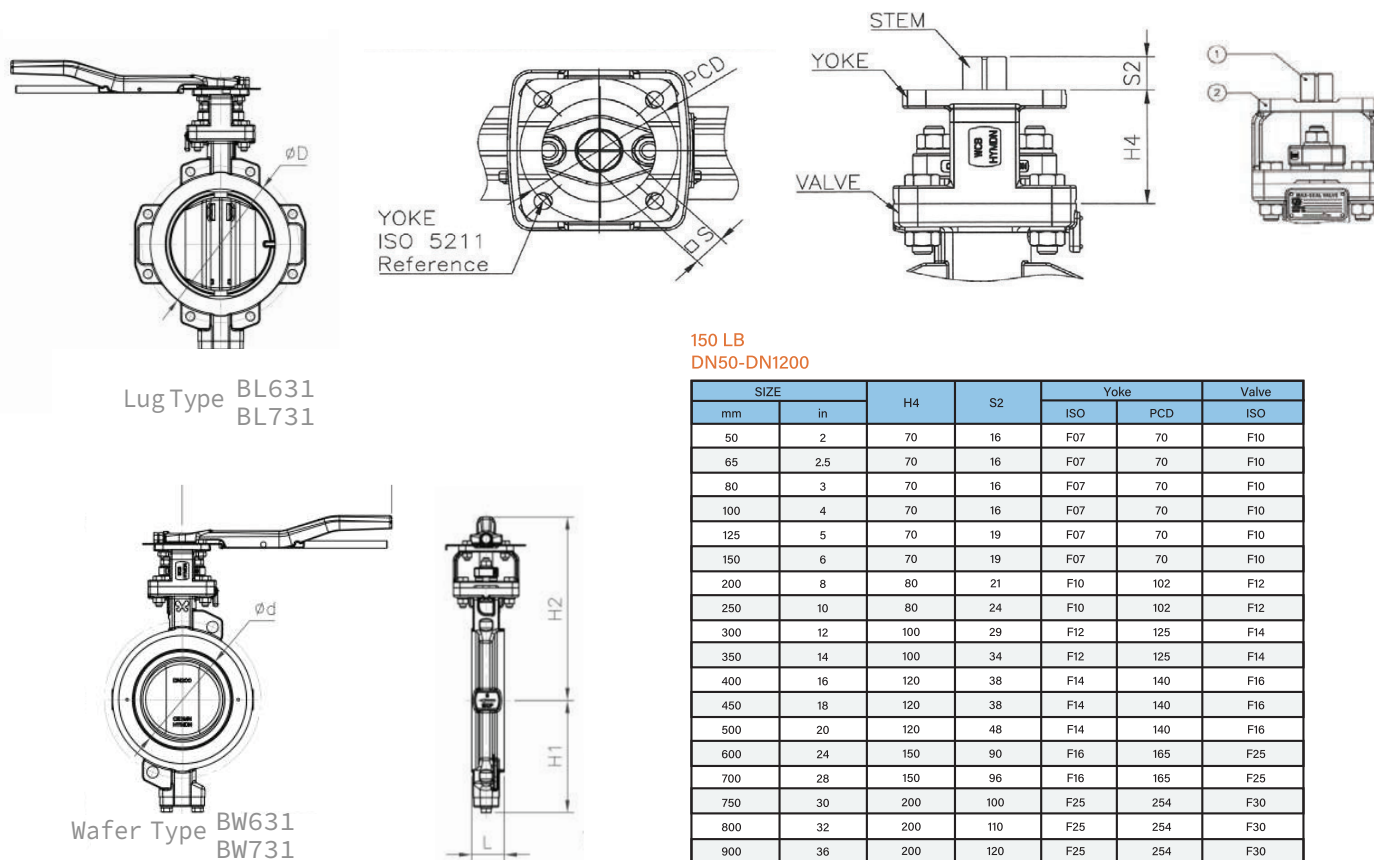
SIZE		L	L1	D	D1	d	H1	H2	H3	S1	d1	S (b*h)	ISO	Weight (lbs)		
in	mm													Wafer	Lug	Flange
2	50	45	-	95	150	46	118	128	86	18	18	14	F10	13	15	-
2.5	65	48	-	112	180	61	126	136	86	18	18	14	F10	15	17	-
3	80	48	114	126	190	76	134	140	86	18	18	14	F10	17	18	39
4	100	54	127	155	230	96	144	150	86	18	18	14	F10	20	27	41
5	125	57	-	184	255	118	178	170	89	21	22	17	F10	25	39	-
6	150	57	140	215	280	143	190	185	89	21	22	17	F10	31	40	61
8	200	62	152	267	345	188	214	215	101	23	25	19	F12	44	62	99
10	250	70	165	326	405	236	254	260	104	26	28	22	F12	68	97	139
12	300	81	178	375	485	281	298	290	129	31	35	27	F14	102	142	218
14	350	92	190	416	535	320	328	320	134	36	42	32	F14	143	202	282
16	400	102	216	480	595	371	377	370	158	40	50	36	F16	216	302	381
18	450	114	222	534	635	420	402	395	158	40	50	36	F16	288	381	458
20	500	127	229	588	700	469	437	430	168	50	60	46	F16	377	533	580
24	600	154	267	692	815	549	492	480	240	90	65	18*12	F25	606	833	893
28	700	165	292	800	927	655	570	555	245	95	75	20*12	F25	848	1157	1398
30	750	190	318	857	984	698	605	600	300	100	85	25*14	F30	1124	1366	1748
32	800	190	318	910	1060	755	630	625	310	110	90	25*14	F30	1215	1692	2024
36	900	203	330	1000	1168	870	690	665	320	120	100	28*16	F30	1470	2112	2615
40	1000	216	410	1115	1289	943	768	765	360	130	115	32*18	F35	2063	2681	3468
44	1100	254	410	1220	1403	1045	818	815	360	130	115	32*18	F35	2586	3362	4539
48	1200	254	470	1330	1510	1145	884	880	360	130	125	36*20	F35	3084	3933	5194

300LB

SIZE		L	L1	D	D1	d	H1	H2	H3	S1	d1	S (b*h)	ISO	Weight (lbs)		
in	mm													Wafer	Lug	Flange
2	50	45	-	95	-	46	118	128	86	18	18	14	F10	13.2	17.6	-
2.5	65	48	-	112	-	61	126	136	86	18	18	14	F10	15.4	19.8	-
3	80	48	114	126	190	76	134	140	86	18	18	14	F10	17.6	22.3	30.9
4	100	54	127	155	230	96	144	150	86	18	18	14	F10	19.8	28.7	41.9
5	125	57	-	184	-	118	178	170	89	21	22	17	F10	26.5	39.7	-
6	150	59	140	224	318	143	199	200	101	23	25	19	F12	39.7	57.3	92.6
8	200	73	152	280	381	188	234	240	104	26	28	22	F12	61.7	94.8	149.9
10	250	83	165	345	445	236	278	260	129	31	35	27	F14	114.6	156.5	209.4
12	300	92	178	395	521	281	318	310	134	36	42	32	F14	158.7	224.8	328.5
14	350	117	190	440	585	320	367	360	158	40	50	36	F16	231.5	354.9	421.1
16	400	133	216	495	648	371	392	385	168	50	60	46	F16	326.3	480.6	573.2
18	450	149	222	560	712	420	437	425	240	90	65	18*12	F25	471.8	696.7	908.3
20	500	159	229	622	775	469	465	450	245	95	75	20*12	F25	597.5	870.8	1159.6
24	600	181	267	720	915	549	530	530	310	110	90	25*14	F30	952.4	1417.6	1785.7



Dimensional Data for ISO Actuator Mounting



SIZE		H4	S2	Yoke		Valve
mm	in			ISO	PCD	ISO
50	2	70	16	F07	70	F10
65	2.5	70	16	F07	70	F10
80	3	70	16	F07	70	F10
100	4	70	16	F07	70	F10
125	5	70	19	F07	70	F10
150	6	70	19	F07	70	F10
200	8	80	21	F10	102	F12
250	10	80	24	F10	102	F12
300	12	100	29	F12	125	F14
350	14	100	34	F12	125	F14
400	16	120	38	F14	140	F16
450	18	120	38	F14	140	F16
500	20	120	48	F14	140	F16
600	24	150	90	F16	165	F25
700	28	150	96	F16	165	F25
750	30	200	100	F25	254	F30
800	32	200	110	F25	254	F30
900	36	200	120	F25	254	F30
1000	40	230	130	F30	298	F35
1100	44	230	130	F30	298	F35
1200	48	230	130	F30	298	F35

TORQUE CHARTS

ANSI Class 150 LB Models BW631/BL631

SIZE		SOFT SEAT BAR/PSI						FIRE SAFE SEAT BAR/PSI					
in	mm	Δ P 6BAR		Δ P 10BAR		Δ P 16BAR		Δ P 6BAR		Δ P 10BAR		Δ P 16BAR	
		Nm	in Lbs	Nm	in Lbs	Nm	in Lbs	Nm	in Lbs	Nm	in Lbs	Nm	in Lbs
2	50	16	142	20	177	24	212	23	204	26	230	29	257
2.5	65	18	159	21	186	26	230	27	239	35	310	38	336
3	80	21	186	27	239	32	283	32	283	38	336	47	416
4	100	26	230	31	274	41	363	44	389	52	460	61	540
5	125	32	283	47	416	69	611	62	549	77	682	100	885
6	150	45	398	62	549	93	823	83	735	103	912	135	1195
8	200	74	655	115	1018	175	1549	152	1345	182	1611	202	1788
10	250	117	1036	183	1620	281	2487	237	2098	272	2407	321	2841
12	300	189	1673	290	2567	441	3903	357	3160	411	3638	487	4310
14	350	284	2514	430	3806	583	5160	506	4478	587	5195	696	6160
16	400	417	3691	629	5567	852	7541	705	6240	827	7320	990	8762
18	450	522	4620	804	7116	1105	9780	906	8019	1070	9470	1289	11409
20	500	788	6974	1185	10488	1601	14170	1266	11205	1497	13250	1809	16011
24	600	1242	10993	1851	16383	2486	22003	1901	16825	2259	19994	2736	24216

ANSI Class 300 LB Models BW731/BL731

SIZE		SOFT SEAT BAR/PSI						FIRE SAFE SEAT BAR/PSI					
in	mm	Δ P 20BAR		Δ P 30BAR		Δ P 40BAR		Δ P 20BAR		Δ P 30BAR		Δ P 40BAR	
		Nm	in Lbs	Nm	in Lbs	Nm	in Lbs	Nm	in Lbs	Nm	in Lbs	Nm	in Lbs
2	50	28	248	36	319	44	389	33	292	39	345	46	407
3	60	31	274	40	354	49	434	40	354	49	434	58	513
3	80	36	319	46	407	57	504	56	496	66	584	77	682
4	100	60	531	83	735	105	929	93	832	115	1018	137	1213
5	125	104	920	142	1257	179	1584	153	1354	190	1682	228	2018
6	150	152	1345	206	1823	261	2310	219	1938	274	2425	328	2903
8	200	462	4089	642	5682	822	7275	653	5780	833	7373	1014	8975
10	250	726	6426	1001	8860	1276	11294	995	8806	1269	11232	1544	13666
12	300	1075	9515	1474	13046	1874	16586	1430	12657	1829	16188	2228	19719
14	350	1676	14834	2276	20144	2875	25446	2138	18923	2737	24225	3337	29535
16	400	2278	20162	3112	27544	3947	34934	2892	25596	3727	32987	4562	40377
18	450	3131	27712	4266	37757	5401	47803	3897	34491	5031	44528	6166	54574
20	500	4871	43112	6625	58636	8378	74152	5924	52432	7678	71107	9430	83463
24	600	6606	58468	8984	79515	11362	100562	8034	71107	10412	92154	12789	113192

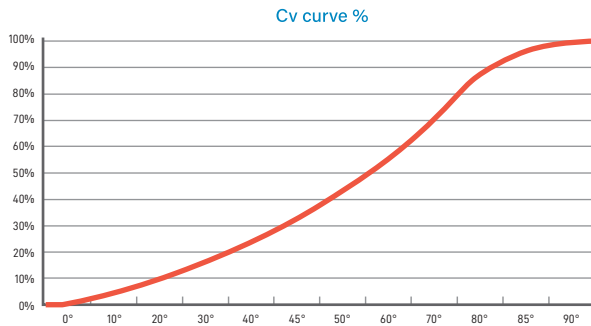
1. All above valve torques are sized as wet service, defined as lubricated clean and nonabrasive line medias. Torques contain a safety factor of 20%.

2. Installing seats in the upstream direction will result in lower torques and better life cycles.

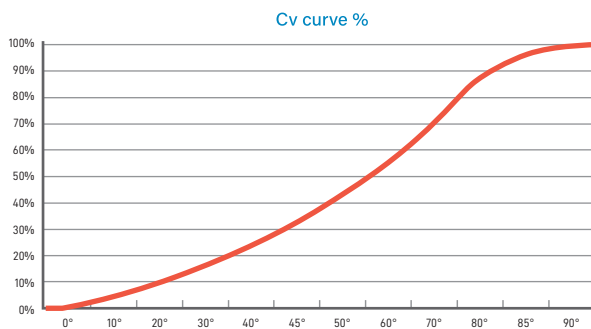


Flow Coefficients & Technical Data

Cv FLOW COEFFICIENT



Cv FLOW COEFFICIENT FOR METAL SEATED VALVES



150LB

SIZE		Cv Value									
mm	in	10°	20°	30°	40°	45°	50°	60°	70°	80°	90°
50	2	0	8	22	36	44	51	60	69	72	70
65	2.5	2	16	38	61	71	83	109	135	146	150
80	3	6	33	62	94	108	118	143	176	208	227
100	4	16	58	106	155	178	213	274	349	433	473
125	5	20	94	167	230	263	310	391	488	561	605
150	6	40	147	242	335	382	422	560	729	925	1010
200	8	66	237	368	509	606	712	985	1296	1640	2004
250	10	139	390	595	807	963	1168	1606	2134	2814	3199
300	12	204	548	820	1138	1357	1591	2219	3067	4085	4672
350	14	264	674	972	1386	1658	1994	2840	3925	5164	5947
400	16	384	864	1196	1765	2155	2611	3755	5105	6975	7920
450	18	508	1092	1551	2341	2881	3522	5125	7134	9511	10599
500	20	626	1294	1792	2651	3304	4082	5919	8256	11429	13126
600	24	1047	2251	3178	4563	5543	6568	9277	12932	17093	18328

300LB

SIZE		Cv Value									
mm	in	10°	20°	30°	40°	45°	50°	60°	70°	80°	90°
80	3	6	33	62	94	108	118	143	176	208	227
100	4	16	58	106	155	178	213	274	349	433	473
125	5	20	94	167	230	263	310	391	488	561	605
150	6	37	137	225	312	355	393	521	678	860	939
200	8	62	220	343	473	563	662	916	1206	1525	1864
250	10	129	362	554	750	896	1087	1493	1985	2617	2975
300	12	190	510	762	1059	1262	1480	2064	2852	3799	4345
350	14	246	627	904	1289	1542	1854	2641	3650	4803	5531
400	16	357	803	1112	1642	2004	2428	3492	4748	6487	7609
450	18	473	1015	1442	2177	2679	3275	4766	6634	8845	10739
500	20	583	1204	1667	2466	3073	3797	5504	7678	10629	12207
600	24	974	2093	2956	4244	5155	6108	8627	12027	15897	17045

Temperature		Class 150				Class 300			
		PTFE		RPTFE		PTFE		RPTFE	
°F	°C	psig	bar	psig	bar	psig	bar	psig	bar
-20 to 100	-29 to 38	285	19.7	285	19.7	740	51	740	51
150	66	273	18.8	273	18.8	708	48.8	708	48.8
200	93	260	17.9	260	17.9	550	37.9	675	46.3
250	121	245	16.9	245	16.9	425	29.3	530	36.5
300	149	230	15.9	230	15.9	300	20.7	390	26.9
350	177	140	9.7	215	14.8	175	12.1	250	17.2
400	204	50	3.4	100	6.9	50	3.4	100	6.9



STATE OF THE ART UNIQUE DESIGN

3 VALVES IN ONE

OUR STANDARD SOFT SEATED VALVE CAN BE UPGRADED TO INCONEL METAL SEATED VALVE OR FIRE SAFE DESIGN.

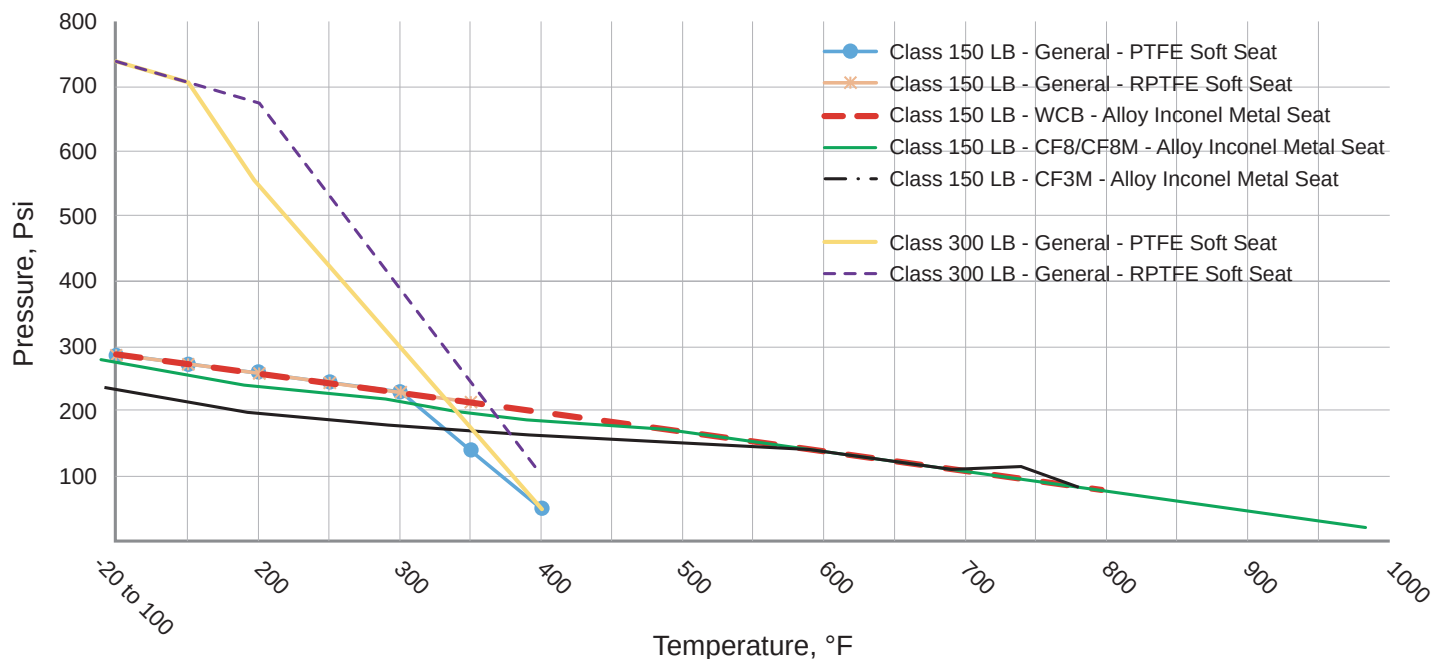
Upgrade Your Valve with these Easy to Install Repair Kits.





Max-Seal's High Performance Tech Data

PRESSURE-TEMPERATURE RATING FOR SOFT SEATS AND METAL SEATS



Body and Seat Temperature		Class 150										Class 300			
		General (a)				WCB		CF8/CF8M		CF3M		General (a)			
		PTFE		RPTFE		AMS 5596 Alloy Inconel (b)						PTFE		RPTFE	
°F	°C	psig	bar	psig	bar	psig	bar	psig	bar	psig	bar	psig	bar	psig	bar
20 to 100	29 to 38	285	197	285	197	285	197	275	189	230	159	740	51	740	51
150	66	273	188	273	188	273	188	265	176	313	147	708	78.8	708	58.8
200	93	260	179	260	179	260	179	235	162	195	134	550	37.9	675	46.5
250	121	245	169	245	169	245	169	225	155	185	128	425	29.3	530	36.5
300	149	230	159	230	159	230	159	215	149	175	121	300	20.7	300	26.9
350	177	140	97	215	148	215	148	195	134	168	116	175	12.1	250	17.2
400	204	50	34	100	69	200	138	183	126	150	110	80	3.4	100	6.9
500	260			(c)	(c)	170	117	170	117	150	103			(c)	(c)
600	316					140	97	140	97	140	97				
650	343					125	86	125	86	125	86				
700	371					110	76	110	76	110	76				
750	390					95	66	96	66	110	76				
800	427					80	55	80	55	80	55				
850	454					(d)	(d)	66	45	(c)	(c)				
900	482					(d)	(d)	50	34						
950	510					(d)	(d)	35	24						
1000	538					(d)	(d)	20 (f)	14 (f)						

(a) General carbon steel and stainless steel

(b) AMS 5596 Inconel represents Aerospace Material Specification level Inconel 718

(c) RPTFE covers instantaneous 500°F depends on working condition

(s) Above 800°F the carbide phase of WCB might be transed to graphite. Workable but not suggested

(e) Shall not be used over 800°F

(f) From 1000°F, shall only use CF8/CF8M with carbon content equals/greater than 0.04%. For temperature range between 1000°F to 1500°F, contact engineering sales for further details.

Special descriptions, dimensions and construction details illustrated may vary slight from this bulletin. They are for general use only. We reserve the right to revise or modify product design without prior notice.



YOUR ONE-STOP-SHOP FOR ALL YOUR BUTTERFLY VALVES and ACTUATION

Butterfly Valve Packages shipping Daily

Resilient Seated, DI Valves, PFA lined, AWWA Valves, High Performance, Double Offset, Triple Offset...



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MAX SEAL
Valves & Controls

Performance Series
Available in Water and Log Style

Max-Seal Performance Series valves are designed and manufactured in accordance with the requirements of ASCE CFR 44 Category A.

MODELS:
Water 51
Log 50

SIZE RANGE:
2" - 36"

PRESSURE RATING:
2" - 12" 150 WOG / Bidirectional Flow
14" - 36" 175 WOG / Bidirectional Flow
200 WOG - Optional - Unidirectional Flow

DESIGN FEATURES:

- Double Iron Body
- Rugged Heavy Duty Construction
- High Quality Epoxy Coating for Superior Corrosion Resistance
- 2 Piece Flange Design Allows for Easy Assembly and Maintenance with Higher Flow Capacity
- ISO Actuator Mounting

AVAILABLE DISC:

- 316 Stainless Steel, D5/Nylon coated, Aluminum
- Special Alloys Available

Max-Seal Concentric Butterfly Valves are backed by the resources and experience of over thirty five years of process valve and automation knowledge.

www.maxsealinc.com

MAX SEAL
Valves & Controls

PTFE Lined Butterfly Valves

CHEM-FLO SERIES
PTFE Lined Valves Designed for High Corrosion, High Purity

Model:
21 Valve Type
24 Log Type

Size Range:
2" - 36"

Pressure Rating:
2" - 12" 150 PSI
14" - 36" 175 PSI

Materials:
Double Iron Body
Spined Inconel Seat
and Spined Discs

ISO 5211 Mounting
(Double Flange)

Typical Applications

- Healthcare
- Pharmaceuticals
- Bio-Pharmaceutical
- Pulp and Paper
- Nuclear Industry
- Petro-chemical
- Acid Processing
- Food Processing
- Mining and Metallurgy
- Chemical Process Industry

Design Advantages

- 2 Piece Body Design
- Easy to Disassemble
- Flomatic Sealed Seats
- 2 Piece Iron Body Design
- Spined Sealed Body
- Low Operating Torque
- Flomatic Sealed Seats
- Standard 90° Stem

Max-Seal's AWWA Series
Double Flanged Design

Series A: CSM CLASS 150 & 250 & 300
Series B: D5000 PFA15/PFA25/PFA30

Size Range: Class 150 2" - 36"
Class 250 4" - 36"

MAX SEAL
Valves & Controls

AWWA Performance Butterfly Valves

Max-Seal's AWWA Series
Double Flanged Design

Series A: CSM CLASS 150 & 250 & 300
Series B: D5000 PFA15/PFA25/PFA30

Size Range: Class 150 2" - 36"
Class 250 4" - 36"

MAX SEAL
Valves & Controls

SEMI-LOG BUTTERFLY VALVES

Chem-Tek Series
Corrosion Resistant Stainless Steel Body

Model:
51

Size Range:
2" - 36"

Pressure Rating:
2" - 12" 150 WOG
14" - 36" 175 WOG
PTFE Seat: 200 WOG
PTFE Seat: 150 WOG

Design Advantages

- Double Flange Design
- Easy to Disassemble
- Flomatic Sealed Seats
- 2 Piece Iron Body Design
- Spined Sealed Body
- Low Operating Torque
- Flomatic Sealed Seats
- Standard 90° Stem

Max-Seal's AWWA Series
Double Flanged Design

Series A: CSM CLASS 150 & 250 & 300
Series B: D5000 PFA15/PFA25/PFA30

Size Range: Class 150 2" - 36"
Class 250 4" - 36"

MAX SEAL
Valves & Controls

Triple Offset Butterfly Valves

TOV Series

Pressure Range:
150/300 Class
Size Range:
2" - 48"

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Lombard, IL 60148
www.maxsealinc.com

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910-738-2866
sales@maxsealinc.com



sales@maxsealinc.com

WWW.MAXSEALINC.COM

910-738-2866



Declutchable Gear Operator

The MAX-GEAR series “MO” declutchable gear operator offers simple and reliable manual positioning of valves, dampers, and other quarter turn devices when overriding an existing actuator.

Torque range 2655 in-lb through 48675 in-lb



Pneumatic
Actuator
with
declutchable
manual
override



- Fully lubricated
- Long life reliability
- Precision machining
- Epoxy coated housing
- Weather proof housing
- Grease fittings standard
- Large diameter input shafts
- Rugged compact construction
- Mounting dimensions to ISO 5211
- External fully adjustable end stops

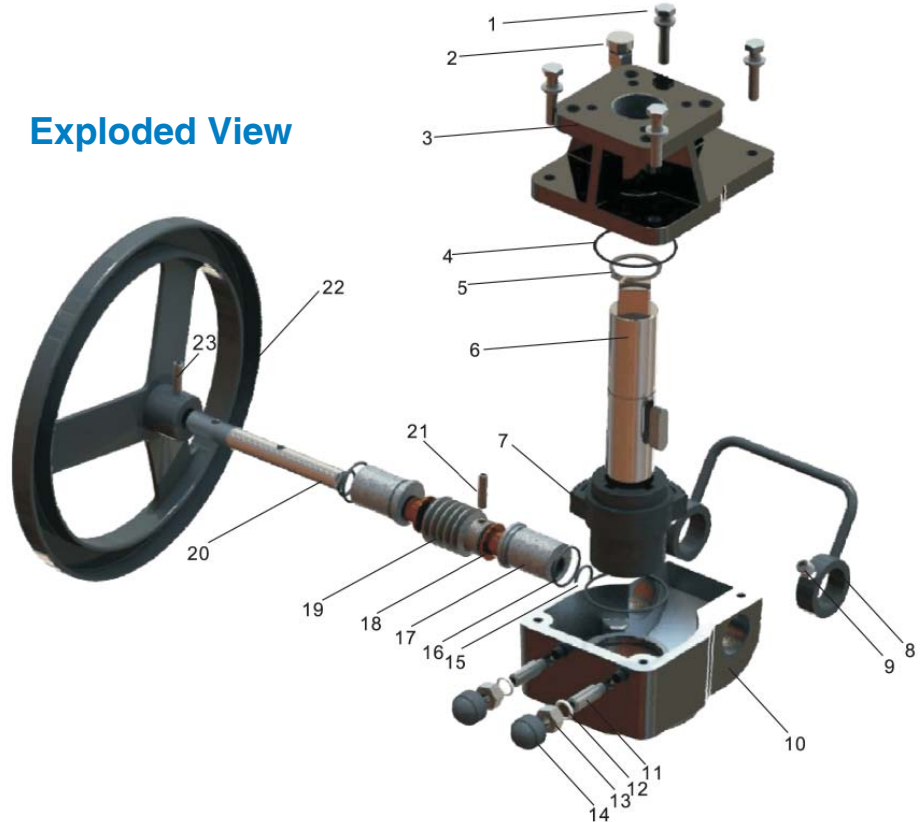


MAX-GEAR simplifies gear mounting, eliminating costly key-way machining, all sizes utilize ISO square drives or Double D drives

Material/Parts List

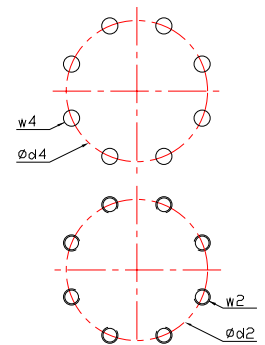
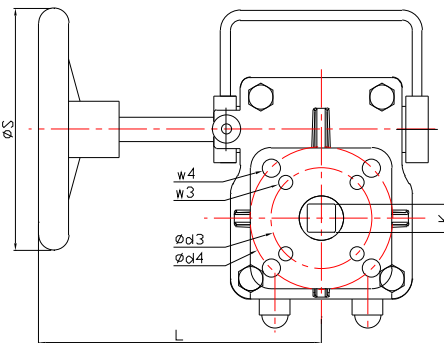
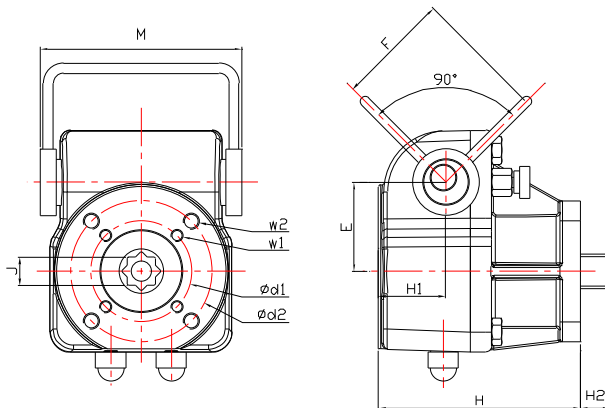
No.	Name	Material
1	Bolt	SS304
2	Limiting Assembly	SS304
3	Bracket Cap	Aluminum
4	O-Ring	NBR
5	Clip Spring	Steel
6	Connecting Shaft	Steel
7	Worm Gear	Ductile Iron
8	Wrench	SS304
9	Set Screw	SS304
10	Body	Aluminum
11	Adjusting Bolt	Steel
12	Adjusting Bolt Gasket	Steel
13	Adjusting Nut	Steel
14	Adjusting Nut Sheath	NBR
15	O-Ring	NBR
16	O-Ring	NBR
17	Eccentric Shaft	Nickel Plated CS
18	Bearing	Powder Metal
19	Worm	Steel
20	Rotating Shaft	Steel
21	Pin	Steel
22	Hand Wheel	Steel, Polyester Coated
23	Pin	Steel

Exploded View



Dust proof and water proof: our gear operator is filled with lubricant before leaving the factory. It is solid sealed with valve after installation, meeting IP65 protection grade.

Dimensions and Technical Data



For F25 ISO Pad Only

Model #	Gear Ratio												Valve Side Mounting						Actuator Side Mounting						Torque in-lb	WGT Lbs
		E	F	H	H1	H2	J	K	L	M	S	d1	w1	ISO	d2	w2	ISO	d3	w3	ISO	4	w4	ISO			
MQ50	40:1	1.74	2.13	3.94	1.22	0.55	0.55	0.55	5.63	4.09	7.87	1.97	M6	F05	2.76	M8	F07	1.97	0.26	F05	2.76	0.33	F07	2655	5.1	
MQ70	38:1	2.06	2.76	4.65	1.46	0.67	0.67	0.67	6.97	4.88	7.87	2.76	M8	F07	4.02	M10	F10	2.76	0.33	F07	4.02	0.43	F10	3186	7.7	
MQ102	36:1	2.56	2.76	4.88	1.54	0.87	0.87	0.87	7.48	5.51	11.81	4.02	M10	F10	4.92	M12	F12	4.02	0.43	F10	4.92	0.51	F12	7165	12.3	
MQ140	50:1	3.35	3.07	6.38	2.17	1.06	1.06	1.06	12.8	7.09	15.75	4.02	M10	F10	5.51	M16	F14	4.02	0.43	F10	5.51	0.67	F14	11590	27.6	
MQ165	55:1	4.11	4.13	7.13	2.28	1.42	1.42	1.42	12.55	8.43	23.62	--	--	--	6.50	M20	F16	--	--	--	6.50	0.83	F16	26550	52.9	
MQ254	52:1	5.12	4.53	8.07	2.95	1.81	1.81	1.81	15.75	9.06	27.56	6.50	M20	F16	10.0	M16	F25	6.50	0.83	F16	10.0	0.67	F25	48675	81.6	



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Lumberton, NC 28358

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