

VALTORC

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DOUBLE ECCENTRIC HIGH PERFORMANCE BUTTERFLY VALVES

SERIES 1200



SIZES: 2" - 24"

Features

Top Flange

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

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.

Pin

Pins are offset from the center of the stem which places them in compression rather than shear thus eliminating potential for failure. The pins are precision fit and wedge types which provide positive mechanical attachment of disc to stem.

Disc Stop

The disc stop is a machined position stop on the body that locates the disc in the seat to achieve maximum seat and seal life. The disc stop is designed to prevent disc from rotating in to the wrong direction and minimizing possible seat damage.

Seat Retainer

Retains seat in the body and generally comes with same as body material

Stem Seal

Stem assembly is "live loaded" with two Bellville Spring Washers. This ensures continuous compression of packing and sealing contact at the stem and body. Rocker shaped gland bridge compensates for uneven adjustment of gland bolts.

Blow-out proof stem

Retainer circlip provide blow -out proof stem.

Stem

The high -strength stem is SS 316/ 17-4 ph stainless steel that provides maximum strength for high torque applications.

Extended Neck

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

Bearings

Top and bottom bearings consisting of a 316 stainless steel /TFE glass fabric liner bearing surface, securely support the stem.

Disc

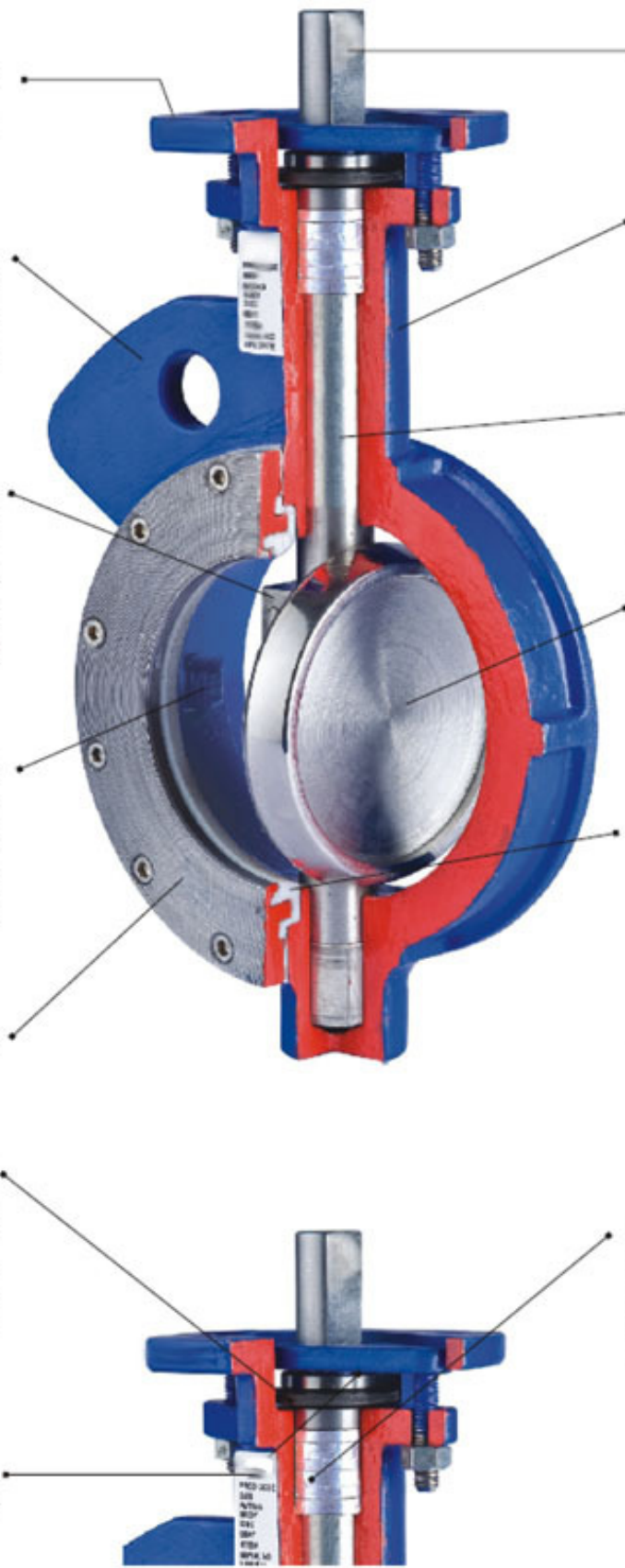
The disc has been engineered to maximize flow and minimize resistance to provide a high flow coefficient (Cv). The standard disc material is 316 stainless steel.

Seat

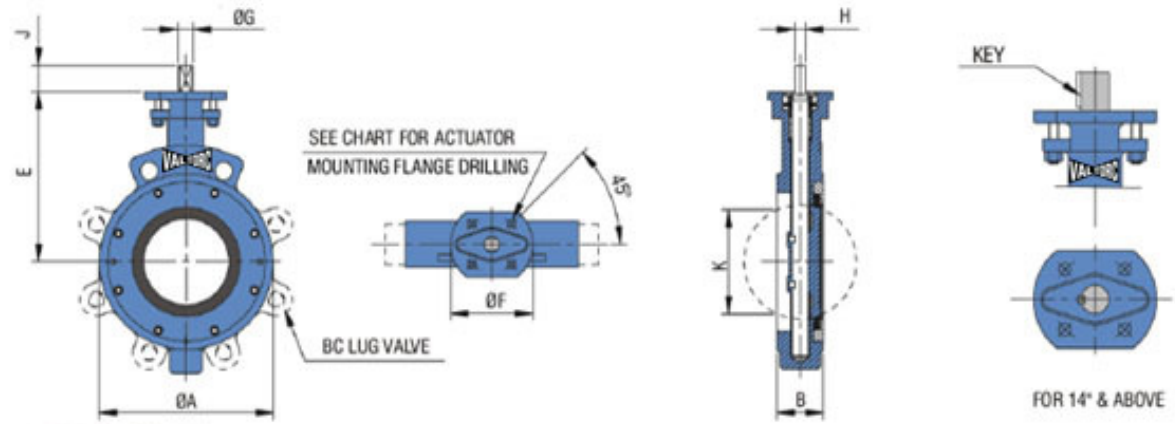
The unique seat design utilizes a flexible lip seal concept. When the disc closes, this action causes a slight deflection in the seat, energizing the seat. During this energized position, the seat has a stored energy force constantly pushing against the disc. In addition to this "energized" force, when pressure is on the insert side, the pressure pushes under the lip which further amplifies the sealing force between the disc and the seat.

Adjustable Stem Packing

The stem packing system features a pull down gland with easy access to the adjusting hex head nuts without removal of the actuator.



Engineering



ASME CLASS 150

DIMENSIONS (inch)

Valve Size		BA	AB	E	BF	Top Flange Drilling			BG	H	J	Key Size	K	Lug Bolting Data				Weights in Lbs	
Inch	DN					BC	No. of holes	Hole Dia.						BC	No. of holes	Threads (UNC-2B)	Walter (Series 44)	Lug (Series 45)	Walter (Series 44)
2	50	3.62	1.69	4.92	4.00	2.76	4	0.39	0.55	0.39	1.25	-	1.6	4.75	4	5/8-11	7.0	10.4	
2 1/2	65	4.13	1.81	5.75	4.00	2.76	4	0.39	0.63	0.43	1.25	-	2.1	5.50	4	5/8-11	8.4	10.8	
3	80	5.00	1.88	5.94	4.00	2.76	4	0.39	0.63	0.43	1.25	-	2.6	6.00	4	5/8-11	10.8	13.2	
4	100	6.18	2.12	6.77	4.00	2.76	4	0.39	0.63	0.43	1.25	-	3.4	7.50	8	5/8-11	15.6	24.5	
5	125	7.32	2.25	7.40	4.00	2.76	4	0.39	0.75	0.51	1.25	-	4.5	8.50	8	3/4-10	19.2	29.5	
6	150	8.50	2.25	8.23	4.00	2.76	4	0.39	0.75	0.51	1.25	-	5.5	9.50	8	3/4-10	23.3	35.5	
8	200	10.63	2.50	9.41	6.00	4.92	4	0.55	0.87	0.63	1.25	-	7.3	11.75	8	3/4-10	45.5	47.0	
10	250	12.76	2.81	11.02	6.00	4.92	4	0.55	1.18	0.87	2.00	-	9.2	14.25	12	7/8-9	62.7	89.9	
12	300	15.00	3.19	12.20	6.00	4.92	4	0.55	1.38	0.94	2.00	-	11.7	17.00	12	7/8-9	111.1	126.1	
14	350	16.26	3.62	13.19	6.00	4.92	4	0.55	1.57	-	2.00	0.47x0.31	12.7	18.75	12	1-8	136.7	182.3	
16	400	18.50	4.00	16.02	8.27	6.50	4	0.83	1.97	-	2.50	0.47x0.39	14.6	21.25	16	1-8	181.2	248.0	
18	450	21.02	4.50	16.81	8.27	6.50	4	0.83	2.16	-	2.50	0.63x0.39	16.4	22.75	16	1 1/8-8	233.2	306.4	
20	500	23.00	5.00	17.71	8.27	6.50	4	0.83	2.36	-	4.00	0.71x0.43	18.35	25.00	20	1 1/8-8	252.0	412.9	
24	600	27.24	6.06	20.87	11.81	10.00	8	0.71	2.75	-	4.00	0.79x0.47	21.8	29.50	20	1 1/4-8	507.1	701.5	

DIMENSIONS (mm)

Valve Size		BA	AB	E	BF	Top Flange Drilling			BG	H	J	Key Size	K	Lug Bolting Data				Weights in Kg	
Inch	DN					BC	No. of holes	Hole Dia.						BC	No. of holes	Threads (UNC-2B)	Walter (Series 44)	Lug (Series 45)	Walter (Series 44)
2	50	92	43	125	102	70	4	10	14	10	32	-	39.7	120.7	4	5/8-11	3.2	4.7	
2.5	65	105	46	146	102	70	4	10	16	11	32	-	53.0	139.7	4	5/8-11	3.8	4.9	
3	80	127	48	151	102	70	4	10	16	11	32	-	65.8	152.4	4	5/8-11	5.9	6.0	
4	100	157	54	172	102	70	4	10	16	11	32	-	85.5	190.5	8	5/8-11	7.1	11.1	
5	125	186	57	188	102	70	4	10	19	13	32	-	115.5	215.9	8	3/4-10	8.7	13.4	
6	150	216	57	209	102	70	4	10	19	13	32	-	139.7	241.3	8	3/4-10	10.6	16.1	
8	200	270	63	239	152	125	4	14	22	16	32	-	185.9	298.5	8	3/4-10	20.7	21.3	
10	250	324	71	280	152	125	4	14	30	22	51	-	232.8	362.0	12	7/8-9	28.5	40.8	
12	300	381	81	310	152	125	4	14	35	24	51	-	279.7	431.8	12	7/8-9	50.4	57.2	
14	350	413	92	335	152	125	4	14	40	-	51	12x8	324.1	476.2	12	1-8	62.0	82.7	
16	400	470	101	407	210	165	4	21	50	-	64	12x10	370.3	539.7	16	1-8	82.2	112.5	
18	450	534	114	427	210	165	4	21	55	-	64	16x10	416.0	577.8	16	1 1/8-8	105.8	139.0	
20	500	584	127	450	210	165	4	21	60	-	102	18x11	466.1	635.0	20	1 1/8-8	144.3	187.3	
24	600	692	154	530	300	254	8	18	70	-	102	20x12	552.7	749.3	20	1 1/4-8	230.0	318.2	

Cv VALUES - VALVE SIZING COEFFICIENT

Disc Position (degrees)	Valve Size													
	2"	2.5"	3"	4"	5"	6"	8"	10"	12"	14"	16"	18"	20"	24"
10	1.3	2.6	4.1	8.4	13	26	48	76	114	133	181	171	204	278
20	5.5	9	14	29	42	74	145	231	340	421	556	592	734	1090
30	13.5	19	32	63	89	147	285	471	689	862	1125	1388	1731	2570
40	24	34	57	115	163	248	488	793	1150	1448	1880	3047	3149	4586
50	37	53	87	173	285	375	735	1193	1734	2186	2891	3926	4872	7265
60	54	79	124	249	376	559	1098	1782	2595	3246	4283	5685	7045	10560
70	73	105	163	327	518	789	1587	2534	3689	4599	6072	7755	8575	14275
80	96	139	200	401	684	1070	2116	3431	5010	6315	8353	10185	12750	19050
90	98	153	207	413	752	1227	2432	3909	5744	7254	9544	10950	13960	21025

Rated Cv = The volume of water in USgpm that will pass through a given valve at a pressure drop of 1 Psi.

ASME CLASS 300

DIMENSIONS (Inch)

Valve Size		ØA	★B	E	ØF	Top Flange Drilling			ØG	H	J	Key Size	K	Lug Bolting Data			Weights in Lbs	
Inch	DN					BC	No. of holes	Hole Dia.						BC	No. of holes	Threads UNC-2B	Wafer (Series 47)	Lug (Series 48)
2	50	3.62	1.69	4.92	4.00	2.76	4	0.39	0.55	0.39	1.25	-	1.6	5.00	8	5/8-11	7.9	11.7
2 1/2	65	4.13	1.81	5.75	4.00	2.76	4	0.39	0.63	0.43	1.25	-	2.1	5.88	8	3/4-10	8.4	15.0
3	80	5.00	1.88	5.94	4.00	2.76	4	0.39	0.63	0.43	1.25	-	2.6	6.63	8	3/4-10	12.1	18.1
4	100	6.18	2.12	6.77	4.00	2.76	4	0.39	0.63	0.43	1.25	-	3.4	7.88	8	3/4-10	17.2	24.9
5	125	7.32	2.31	7.60	4.00	2.76	4	0.39	0.75	0.51	1.25	-	4.5	9.25	8	3/4-10	19.8	31.3
6	150	8.50	2.31	8.66	4.00	4.92	4	0.55	0.75	0.51	1.25	-	5.5	10.63	12	3/4-10	31.3	68.8
8	200	10.63	2.88	10.23	6.00	4.92	4	0.55	0.87	0.63	1.25	-	7.1	13.00	12	3/4-10	53.1	79.1
10	250	12.76	3.25	11.42	6.00	4.92	4	0.55	1.18	0.87	2.00	-	9.0	15.25	16	1-8	88.6	116.4
12	300	15.00	3.62	12.80	6.00	4.92	4	0.55	1.38	0.94	2.00	-	10.7	17.75	16	1 1/8-8	151.7	201.1
14	350	16.26	4.62	14.76	8.27	6.50	4	0.83	1.57	-	2.00	0.63x0.39	12.1	20.25	20	1 1/4-8	285.9	326.3
16	400	18.50	5.25	16.73	8.27	6.50	4	0.83	1.97	-	2.50	0.63x0.39	13.7	22.50	20	1 1/4-8	337.5	403.0
18	450	21.02	5.88	18.31	11.81	10.00	8	0.71	2.16	-	2.50	0.79x0.47	15.6	24.75	24	1 1/4-8	391.3	515.4
20	500	23.00	6.25	19.88	11.81	10.00	8	0.71	2.36	-	4.00	0.98x0.55	17.2	27.00	24	1 1/4-8	508.8	737.4
24	600	27.24	7.12	22.83	11.81	11.73	8	0.82	2.75	-	4.00	1.1x0.63	20.6	32.00	24	1 1/2-8	735.0	1015.9

DIMENSIONS (mm)

Valve Size		ØA	★B	E	ØF	Top Flange Drilling			ØG	H	J	Key Size	K	Lug Bolting Data			Weights in Kg.	
Inch	DN					BC	No. of holes	Hole Dia.						BC	No. of holes	Threads UNC-2B	Wafer (Series 47)	Lug (Series 48)
2	50	92	43	125	102	70	4	10	14	10	32	-	39.7	127.0	8	5/8-11	3.6	5.3
2.5	65	105	46	146	102	70	4	10	16	11	32	-	53.0	149.2	8	3/4-10	3.8	6.8
3	80	127	48	151	102	70	4	10	16	11	32	-	65.8	168.3	8	3/4-10	5.5	8.2
4	100	157	54	172	102	70	4	10	16	11	32	-	85.5	200.0	8	3/4-10	7.8	11.3
5	125	186	59	193	102	70	4	10	19	13	32	-	115.5	235.0	8	3/4-10	9.0	14.2
6	150	216	59	220	102	125	4	14	22	16	32	-	139.7	269.9	12	3/4-10	14.5	31.9
8	200	270	73	260	152	125	4	14	30	22	51	-	179.3	330.2	12	3/4-10	24.1	35.9
10	250	324	83	290	152	125	4	14	35	24	51	-	228.6	387.4	16	1-8	40.2	52.8
12	300	381	92	325	152	125	4	14	41	29	51	-	272.3	450.8	16	1 1/8-8	68.8	91.2
14	350	413	117	375	210	165	4	21	55	-	64	16x10	306.8	514.4	20	1 1/4-8	129.7	148.0
16	400	470	133	425	210	165	4	21	55	-	64	16x10	348.4	571.5	20	1 1/4-8	153.1	182.8
18	450	534	149	465	300	254	8	18	70	-	102	20x12	395.2	628.6	24	1 1/4-8	177.5	233.8
20	500	584	159	505	300	254	8	18	90	-	102	25x14	437.3	685.8	24	1 1/4-8	230.8	334.5
24	600	692	181	580	300	298	8	21	102	-	102	28x16	523.5	812.8	24	1 1/2-8	333.4	460.8

Cv VALUES - VALVE SIZING COEFFICIENT

Disc Position (degrees)	Valve Size													
	2"	2.5"	3"	4"	5"	6"	8"	10"	12"	14"	16"	18"	20"	24"
10	1.3	2.6	4.1	8.4	13	20	37	53	77	91	145	117	134	211
20	5.5	9	14	29	42	70	115	167	237	283	428	498	580	898
30	13.5	19	32	63	89	139	248	361	510	625	873	1188	1360	2127
40	24	34	57	115	163	245	432	639	887	1099	1494	2151	2488	3879
50	37	53	87	173	285	374	661	968	1351	1632	2298	3313	3855	6019
60	54	79	124	249	376	538	976	1437	2005	2378	3479	4809	5588	8713
70	73	105	163	327	518	727	1363	2011	2832	3336	4994	6554	7588	11738
80	96	139	200	401	684	934	1770	2646	3809	4465	7195	8625	9860	15600
90	98	153	207	413	752	1021	1956	2922	4214	4901	8022	9606	10829	17103

Rated Cv = The volume of water in USgpm that will pass through a given valve at a pressure drop of 1 Psi.

ASME CLASS 600

DIMENSIONS (Inch)

Valve Size		ØA	* B	E	ØF	TOP FLANGE DRILLING			ØG	H	J	Key Size	K	LUG BOLTING DATA			Weights In Lbs	
Inch	DN					BC	NO. OF HOLES	HOLE DIA.						BC	NO. OF HOLES	THRADES UNC-2B	Waler (Series 4M)	Lug (Series 4N)
3	80	8.25	2.12	5.94	4.00	2.76	4	0.39	0.75	0.51	1.25	-	2.75	6.62	8	3/4-10	24.2	30.8
4	100	10.75	2.50	7.48	4.00	2.76	4	0.39	0.87	0.63	1.25	-	3.54	8.50	8	7/8-11	41.8	57.3
5	125	13.00	3.06	9.05	4.00	2.76	4	0.39	1.18	0.87	2.00	-	4.37	10.50	8	1-8	55.1	88.1
6	150	14.00	3.06	9.05	4.00	2.76	4	0.39	1.18	0.87	2.00	-	5.39	11.50	12	1-8	79.3	119
8	200	16.50	4.00	11.41	6.00	4.92	4	0.55	1.37	-	2.50	0.39x0.39	6.38	13.75	12	1 1/8-7	154.3	227
10	250	20.00	4.62	13.77	6.00	4.92	4	0.55	1.97	-	2.50	0.47x0.39	8.50	17.00	16	1 1/4-7	279	399
12	300	22.00	5.50	15.74	6.00	4.92	4	0.55	1.97	-	2.50	0.47x0.39	10.1	19.25	20	1 1/4-7	385	546

DIMENSIONS (mm)

Valve Size		ØA	* B	E	ØF	TOP FLANGE DRILLING			ØG	H	J	Key Size	K	LUG BOLTING DATA			Weights In Kg.	
Inch	DN					BC	NO. OF HOLES	HOLE DIA.						BC	NO. OF HOLES	THRADES UNC-2B	Waler (Series 4M)	Lug (Series 4N)
3	80	210	54	151	102	70	4	10	19	13	32	-	70	168.3	8	3/4-10	11	14
4	100	275	64	190	102	70	4	10	22	16	32	-	90	215.9	8	7/8-11	19	26
5	125	330	78	230	102	70	4	10	30	22	51	-	111	266.7	8	1-8	25	40
6	150	355	78	245	102	70	4	10	30	22	51	-	137	292.1	12	1-8	36	54
8	200	420	102	290	152	125	4	14	35	-	64	10x10	175	349.2	12	1 1/8-7	70	103
10	250	510	117	350	152	125	4	14	50	-	64	12x10	216	431.8	16	1 1/4-7	127	181
12	300	560	140	400	152	125	4	14	50	-	64	12x10	257	489.0	20	1 1/4-7	175	248

Cv VALUES - VALVE SIZING COEFFICIENT

Disc Position (degrees)	Valve Size						
	3"	4"	5"	6"	8"	10"	12"
10	3	5	10	15	20	40	55
20	8	30	60	70	78	140	190
30	12	45	120	130	209	300	400
40	46	70	190	200	345	500	680
50	67	95	260	270	480	700	1000
60	103	150	415	425	750	1100	1550
70	135	210	590	600	1050	1540	2170
80	158	270	755	765	1350	1970	2790
90	165	300	840	850	1500	2200	3100

Rated Cv = The volume of water in USgpm that will pass through a given valve at a pressure drop of 1 Psi.

Torque

Maximum Torque for ASME class 150

Maximum Torques Lbf - Inch						
Size		Differential Pressure (Psi)				
Inch	DN	50	100	150	230	285
2"	50	168	177	186	204	212
2.5"	65	204	211	219	232	240
3"	80	235	244	254	270	280
4"	100	315	336	357	392	415
5"	125	440	488	537	616	668
6"	150	659	731	803	921	997
8"	200	1117	1256	1395	1623	1770
10"	250	1493	1762	2032	2474	2759
12"	300	1761	2152	2543	3184	3598
14"	350	3091	4030	4969	6509	7504
16"	400	4069	5398	6727	8907	10316
18"	450	5207	6892	8576	11339	13125
20"	500	6875	9054	11232	14805	17114
24"	600	10335	13722	17110	22666	26257

Maximum Torques Nm						
Size		Differential Pressure (Bar)				
Inch	DN	3.5	7	10	16	19.6
2"	50	19	20	21	23	24
2.5"	65	23	24	25	26	27
3"	80	27	28	29	31	32
4"	100	36	38	40	44	47
5"	125	50	55	61	70	75
6"	150	74	83	91	104	113
8"	200	126	142	158	183	200
10"	250	169	199	230	279	312
12"	300	199	243	287	360	407
14"	350	349	455	561	735	848
16"	400	460	610	760	1006	1166
18"	450	588	779	969	1281	1483
20"	500	777	1023	1269	1673	1934
24"	600	1168	1550	1933	2561	2967

Maximum Torque for ASME class 300

Maximum Torques Lbf - Inch						
Size		Differential Pressure (Psi)				
Inch	DN	150	285	360	585	740
2"	50	186	212	239	283	319
2.5"	65	219	240	257	312	351
3"	80	254	280	320	389	438
4"	100	357	415	542	680	778
5"	125	640	802	898	1162	1348
6"	150	868	1121	1271	1683	1974
8"	200	1662	2189	2501	3361	3966
10"	250	2422	3280	3789	5188	6174
12"	300	3684	5062	5879	8125	9707
14"	350	5701	8542	10226	14856	18118
16"	400	7576	11576	13946	20465	25058
18"	450	9663	14573	17482	25483	31121
20"	500	12221	18464	22164	32338	39506
24"	600	16767	25340	30421	44393	54236

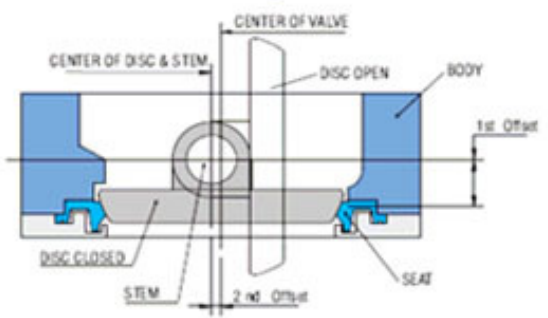
Maximum Torques Nm						
Size		Differential Pressure (Psi)				
Inch	DN	10	19.6	25.2	40.3	51
2"	50	21	24	27	32	36
2.5"	65	25	27	29	35	40
3"	80	29	32	36	44	49
4"	100	40	47	61	77	88
5"	125	72	91	101	131	152
6"	150	98	127	144	190	223
8"	200	188	247	283	380	448
10"	250	274	371	428	586	698
12"	300	416	572	664	918	1097
14"	350	644	965	1155	1679	2047
16"	400	856	1308	1576	2312	2831
18"	450	1092	1646	1975	2879	3516
20"	500	1381	2086	2504	3654	4464
24"	600	1894	2863	3437	5016	6128

Maximum Torque for ASME class 600

Max Torques in Nm					
Valve Size		Pressure (Bar)			
Inch	DN	Less than 10.3	10.3 - 41.4	41.4 - 72.4	72.4 - 102
3"	80	45	79	102	113
4"	100	96	145	179	215
5"	125	132	210	298	325
6"	150	164	289	390	463
8"	200	395	651	859	1107
10"	250	802	1085	1525	1898
12"	300	1141	1265	2203	2373

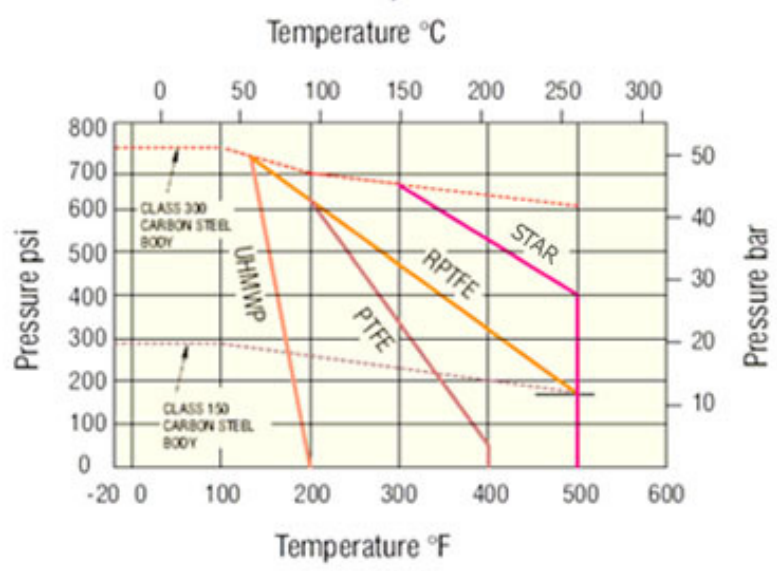
Feature and Selection

Double Offset Disc Design

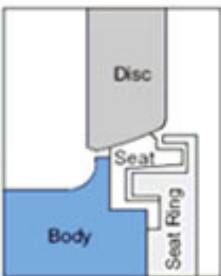


The offset disc produces a cam-like action, pulling the disc from the seat. This action reduces seat wear and eliminates seat deformation when the disc is in open position. The disc does not contact the seat when the valve is in open condition, therefore seat service life is extended and torques are reduced. As the valve closes, the cam-like action converts the rotary motion of the disc to a linear type motion effectively push the disc onto the seat.

Pressure / Temperature

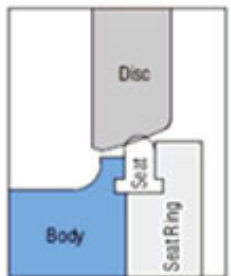


Seat Designs



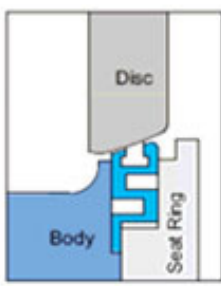
Teflon Seat

Flexible lip seat design attempts to retain its original shape and maintain a seal against the disc regardless of the flow direction



Rubber Seat

The heavy 'T' section seal ring is designed to eliminate the potential extrusion due to high shut-off delta P or high velocity



Fire Safe Seat

During and after fire, when the resilient material has been partially or completely destroyed, the metal seat ring provides a positive seal by remaining in constant contact with the disc in either direction of media flow.

Special Applications

NACE service

Valves are available to comply with NACE MRO 103 standard. These valves are well suited for oil and gas industry applications requiring resistant materials to sulfide stress cracking.

Steam

Valves are available for saturated steam at 200 psi/ 14 bar rating for and 450 psi/ 31 bar

Vacuum

Standard valves are rated for tight shut-off of vacuum to 2×10^{-2} torr.

Oxygen

Valves for critical gaseous oxygen service are specially prepared, cleaned, inspected, assembled and tested to ensure removal of all burrs, sharp edges, dirt, hydrocarbon oil or grease and other contaminants.

Dead End

Lugged style valves are for bi-directional dead-end service at the full pressure temperature rating of the valve.

CODES AND STANDARDS

General design and manufacturing :- API 609 Category B / MSS-SP-68 / EN 593

Inspection and Testing :- API 598 / AISI / FCI 70-2 / MSS-SP-68 / EN 12266-1

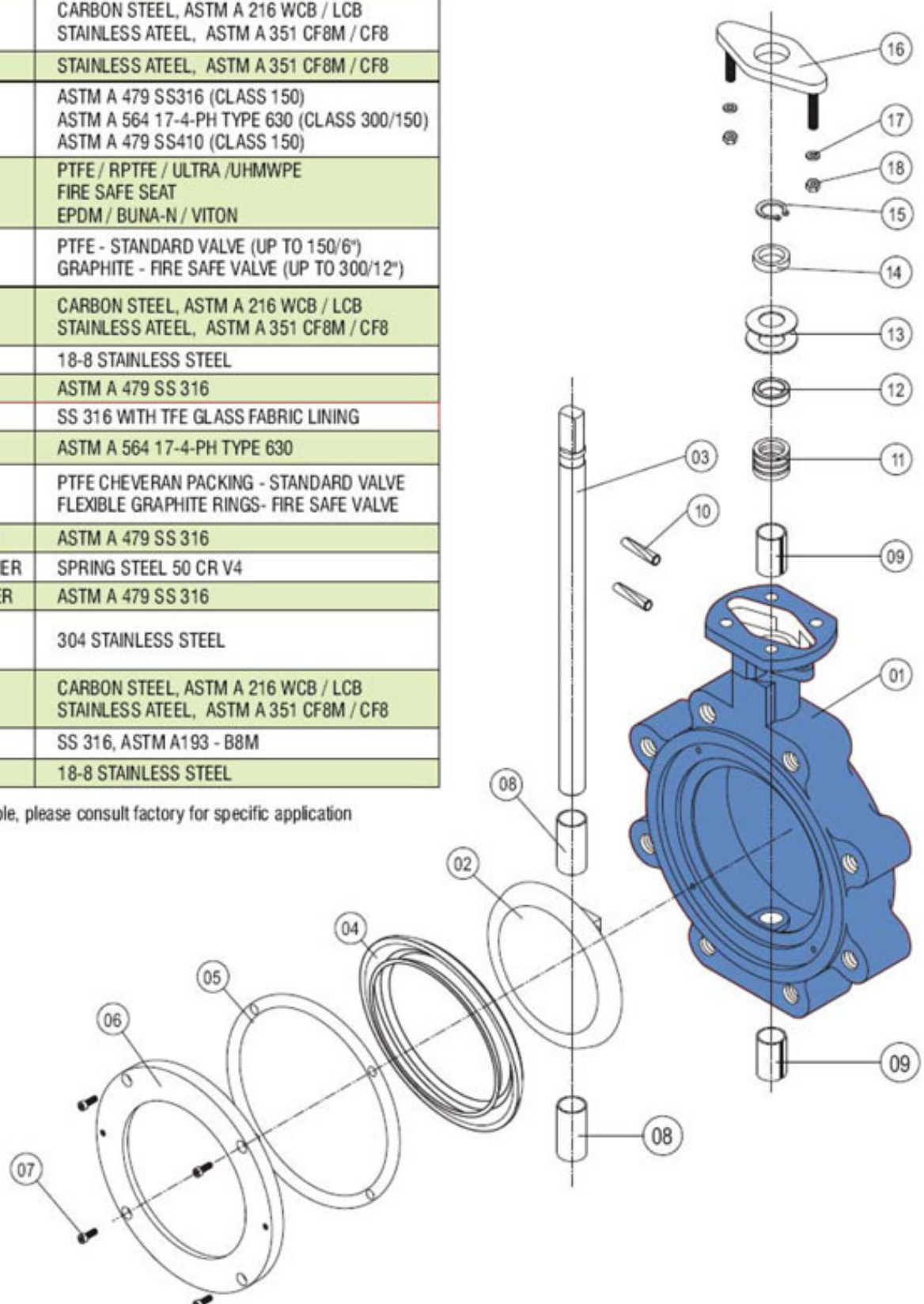
Fire safe testing :- API 607

Pressure temperature rating :- ASME B 16.34

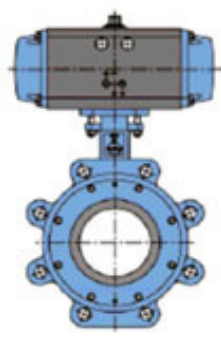
Materials of Construction

Sr. No.	DESCRIPTION	MATERIAL
01	BODY	CARBON STEEL, ASTM A 216 WCB / LCB STAINLESS ATEEL, ASTM A 351 CF8M / CF8
02	DISC	STAINLESS ATEEL, ASTM A 351 CF8M / CF8
03	STEM	ASTM A 479 SS316 (CLASS 150) ASTM A 564 17-4-PH TYPE 630 (CLASS 300/150) ASTM A 479 SS410 (CLASS 150)
04	SEAT	PTFE / RPTFE / ULTRA /UHMWPE FIRE SAFE SEAT EPDM / BUNA-N / VITON
05	BODY GASKET	PTFE - STANDARD VALVE (UP TO 150/6") GRAPHITE - FIRE SAFE VALVE (UP TO 300/12")
06	SEAT RETAINER	CARBON STEEL, ASTM A 216 WCB / LCB STAINLESS ATEEL, ASTM A 351 CF8M / CF8
07	CAP SCREW	18-8 STAINLESS STEEL
08	DISC SPACER	ASTM A 479 SS 316
09	BEARING	SS 316 WITH TFE GLASS FABRIC LINING
10	DISC PIN	ASTM A 564 17-4-PH TYPE 630
11	STEM PACKING	PTFE CHEVERAN PACKING - STANDARD VALVE FLEXIBLE GRAPHITE RINGS- FIRE SAFE VALVE
12	PACKING GLAND	ASTM A 479 SS 316
13	BELLVILLE WASHER	SPRING STEEL 50 CR V4
14	GLAND FOLLOWER	ASTM A 479 SS 316
15	STEM RETAINER CIRCLIP	304 STAINLESS STEEL
16	GLAND FLANGE	CARBON STEEL, ASTM A 216 WCB / LCB STAINLESS ATEEL, ASTM A 351 CF8M / CF8
17	STUD	SS 316, ASTM A193 - B8M
18	HEX NUT	18-8 STAINLESS STEEL

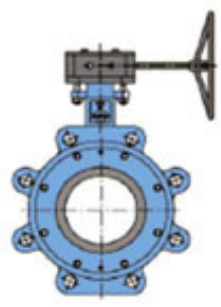
Other materials are available, please consult factory for specific application



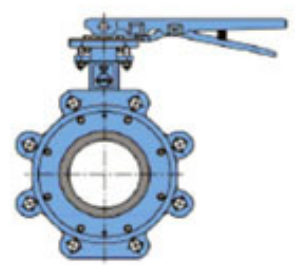
Operators



All valves can be direct mounted with pneumatic actuators or electric actuators and accessories for complete automation options such as fail open/close and positioner controlled. Valves can be mounted with manual overrides.



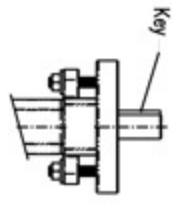
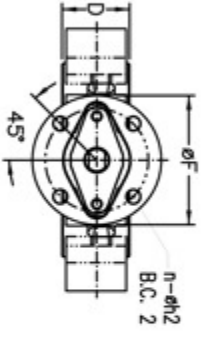
Valves up to size 24" can be direct mounted with gear operators for manual operation. Gear operators can also be attached with chain-wheel operators for opening or closing valves located on pipelines at high elevations.



Valves upto 6" for class 150 and upto 4" for class 300 can be supplied with lever handles for manual operation. Optional accessories for hand-lever operation can be provided for various flow control requirements. Pad locking can also be provided for preventing unauthorized operation.

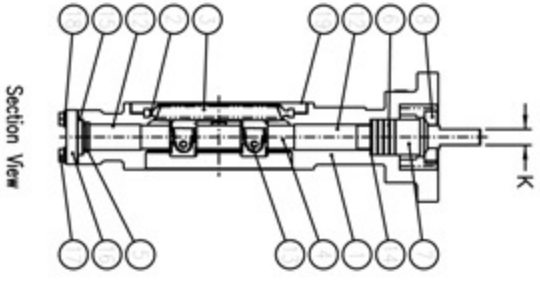
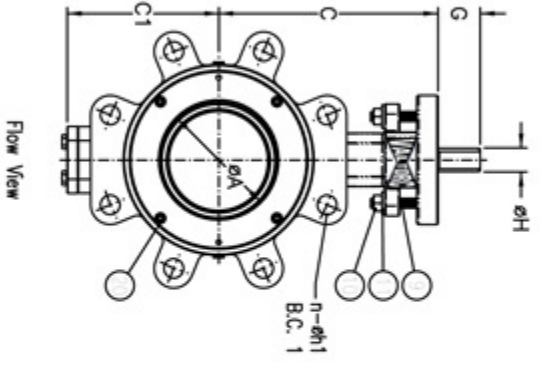
Parts Schedule

Item No.	Name	Material	No. Req'd
1	Body	A216-WCB	1
2	Seat Ring	MTF	1
3	Disc	A351-CF8M	1
4	Stem	A564-630	1
5	Retainer Ring	A276-316	1
6	Packing	PTFE	1 Set
7	Packing Gland	A276-316	1
8	Gland Flange	A351-CF8	1
9	Gland Bolt	Stainless Steel	2
10	Nut	Stainless Steel	2
11	Spring Washer	Stainless Steel	2
12	Bush Bearing	RTFE + Stainless Steel	2
13	Disc Pin	A276-316	1 Set
14	Packing Retainer	A276-316	1
15	Cap Packing	PTFE	1
16	Cap	A216-WCB	1
17	Cap Bolt	Stainless Steel	1 Set
18	Spring Washer	Stainless Steel	1 Set
19	Seat Retainer	ANSI-1020	1
20	Retainer Bolt	Stainless Steel	1 Set



Top View

10" & 12" Stems



Flow View

Section View

Valve Dimensions

Valve Size Inch MM	eA	C	C1	D	eF	G	eH	K	Flange Dimension			Mounting Base				
									B.C. 1	n	dh1	B.C. 2	n	dh2		
3	80	2.91	6.57	4.92	2.17	4.02	1.18	0.748	0.500	23 lbs	6.62	8	3/4"-10unc	3.25	4	0.43
4	100	3.78	7.68	5.71	2.52	5.98	1.26	0.874	0.626	41 lbs	8.50	8	7/8"-9unc	5.00	4	0.55
6	150	5.20	9.45	8.07	3.07	5.98	2.24	1.374	0.31x0.31	87 lbs	11.50	12	1"-8unc	5.00	4	0.55
8	200	6.85	11.42	9.45	4.06	8.03	2.99	1.874	0.50x0.50	161 lbs	13.75	12	1 1/8"-8unc	6.50	4	0.83
10	250	8.78	13.19	11.02	4.61	8.03	2.99	1.874	0.50x0.50	256 lbs	17.00	16	1 1/8"-8unc	6.50	4	0.83
12	300	10.59	15.16	12.72	5.51	11.42	4.02	2.358	0.75x0.50	424 lbs	19.25	20	1 1/4"-8unc	10.00	8	0.75



DIMENSIONS SUBJECT TO CHANGE WITHOUT NOTICE.

NOTE: Size 3"-12"
 Class 600 Double Offset
 Bi-Directional/Double Dead End Service
 DESIGN: ANSI B16.34 & API 609
 FACE TO FACE DIMENSION: API 609 Category B
 FLANGE CONNECTION: ANSI B16.5 Class 600
 STANDARD: API 598