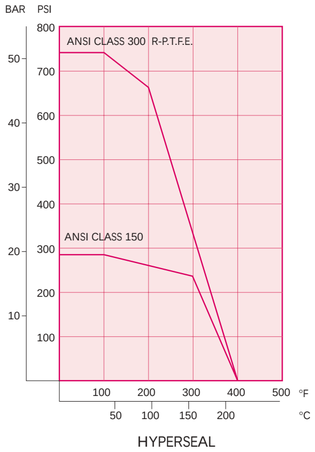


HYPERSEAL

Torques for Sizing Actuators - Inch-Pounds (R - P.T.F.E. Seat)

Actuator selection is dependent upon a number of variable factors such as pressure drop across the valve, seat and bearing friction torques, cryogenic temperatures and flowing media. The figures in the following table are based on standard valves and materials working in normal service conditions. A safety factor as recommended by the actuator manufacturer should be applied. Consult Batley Valve for cryogenic torque figures.

SIZES 50mm to 1000mm CLASS 150/285 DP

VALVE DIAM.	SPINDLE DIAM.	Pressure drop across valve in closed position (psi)				
		50	100	150	200	285
50	12	97	101	105	109	116
80	12	200	211	221	232	250
100	15	363	386	408	430	469
125	20	631	681	731	781	867
150	20	833	905	977	1049	1171
200	25	1570	1733	1895	2058	2335
250	30	2422	2716	3010	3304	3803
300	35	3159	3669	4178	4687	5553
350	35	4325	5001	5676	6351	7499
400	40	6397	7422	8447	9472	11215
450	45	8164	9636	11107	12579	15080
500	45	10375	12158	13940	15722	18752
600	60	15843	19319	22795	26271	32180
700	70	22162	27895	33628	39361	49107
750	80	25873	33455	41038	48621	61511
800	80	30161	38831	47502	56173	70913
900	90	40903	52454	64005	75557	95194
1000	100	50452	67191	83930	100669	129125

SIZES 50mm to 1000mm CLASS 300/740 DP

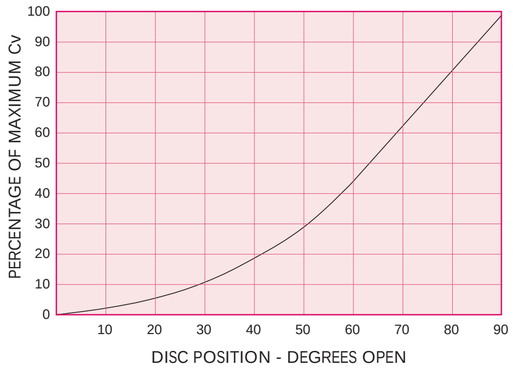
VALVE DIAM.	SPINDLE DIAM.	Pressure drop across valve in closed position (psi)				
		300	400	500	600	740
50	12	117	125	134	143	154
80	15	385	312	338	364	401
100	20	535	595	655	714	798
125	20	882	982	1082	1182	1322
150	25	1346	1526	1706	1885	2137
200	30	2600	2991	3382	3772	4319
250	35	4206	4892	5577	6263	7222
300	40	6163	7327	8491	9655	11285
350	50	9594	11523	13452	15381	18052
400	60	14794	17870	20945	24021	28327
450	65	19650	23901	28152	32402	38535
500	70	25463	31008	36553	42098	49861
600	80	40297	49566	58835	68104	81081
700	90	60777	75519	90261	105003	109091
750	100	72528	94239	113195	132152	158691
800	110	93206	117051	140895	164739	198121
900	120	121946	152749	183553	214357	257482
1000	130	164461	207983	251504	295026	355956

316 shafts cannot be used without increasing size

Nominal Bore	CV Valves for Hyperseal (class 150) - Vane Angle								
	90°	80°	70°	60°	50°	40°	30°	20°	10°
50	89	73	55	40	28	18	11	5	3
80	226	185	140	102	70	45	27	14	7
100	402	330	249	181	125	80	48	24	12
125	642	526	398	289	199	128	77	39	19
150	1204	987	746	542	373	241	144	72	36
200	2190	1796	1358	986	679	438	263	131	66
250	3690	3026	2288	1661	1144	738	443	221	111
300	5483	4496	3399	2467	1700	1097	658	329	164
350	6924	5678	4293	3116	2146	1385	831	415	208
400	9199	7543	5703	4140	2852	1840	1104	552	276
450	11736	9624	7276	5281	3638	2347	1408	704	352
500	14215	11656	8813	6397	4407	2843	1706	853	426
600	20792	17049	12891	9356	6446	4158	2495	1248	624
700	29395	24104	18225	13228	9112	5879	3527	1764	882
750	34019	27896	21092	15309	10546	6804	4082	2041	1021
800	38900	31898	24118	17505	12059	7780	4668	2334	1167
900	46066	37774	28561	20730	14280	9213	5528	2764	1382
1000	60079	49265	37249	27036	18624	12016	7209	3605	1802

Nominal Bore	CV Valves for Hyperseal (class 300) - Vane Angle								
	90°	80°	70°	60°	50°	40°	30°	20°	10°
50	89	73	55	40	28	18	11	5	3
80	226	185	140	102	70	45	27	14	7
100	383	314	237	172	119	77	46	23	11
125	642	526	398	289	199	128	77	39	19
150	1147	941	711	516	356	229	138	69	34
200	2086	1711	1293	939	647	417	250	125	63
250	3515	2882	2179	1582	1090	703	422	211	105
300	5222	4282	3238	2350	1619	1044	627	313	157
350	5885	4826	3649	2648	1824	1177	706	353	177
400	7819	6412	4848	3519	2424	1564	938	469	235
450	9976	8180	6185	4489	3093	1995	1197	599	299
500	12083	9908	7491	5437	3746	2417	1450	725	362
600	17673	14492	10958	7953	5479	3535	2121	1060	530
700	24986	20489	15491	11244	7746	4997	2998	1499	750
750	28916	23711	17928	13012	8964	5783	3470	1735	867
800	33065	27113	20500	14879	10250	6613	3968	1984	992
900	39156	32108	24277	17620	12138	7831	4699	2349	1175
1000	51067	41875	31662	22980	15831	10213	6128	3064	1532

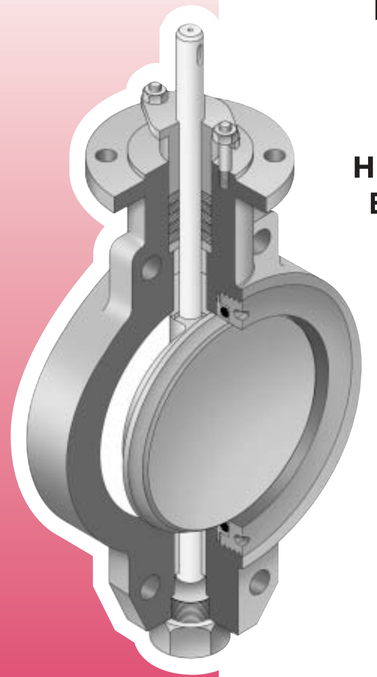
Recommended Duty
On/Off: 0-90°
Control: 0-70°



HSV 001 9/98

BATLEY VALVE
A Division of Hopkinsons

HYPERSEAL
BV 22000



High Performance Butterfly Valves

150 & 300lbs

BATLEY VALVE
A Division of Hopkinsons
Longlands Industrial Estate, Ossett,
West Yorkshire WF5 9JF
TEL: 01924 275931 FAX: 01924 280026

In 1964 BATLEY was probably the first UK manufacturer of high pressure butterfly shut off valves incorporating a PTFE (Teflon) seal. This type of valve is now known as the high performance butterfly valve. With over thirty years experience the present Hyperseal valve has developed into a highly efficient valve for control and isolation duty.

The seal design and valve geometry combine to ensure a uniform 360° seal contact in the closed position and the double eccentric action moves the disc into and out of the seat with the minimum of wear and seating torque.

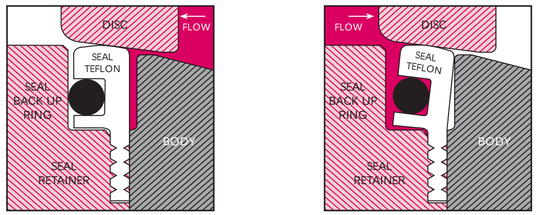
The valves are fully rated to ANSI class 150lb and 300lb in sizes up to 1000mm with sizes above on request. A combination of the full rated ANSI class 300lb body and the economical class 150lb trim with a maximum pressure differential of 285 PSI makes a more competitive valve for reduced service conditions.

Standard valves can be drilled to suit most international flange standards up to class 300lb and special valves can be manufactured with bodies drilled to suit flanges up to ANSI class 2500lb. Lugged and fully flanged designs can be offered on request.

90° on/off action allows for fast operation when necessary and the low torque characteristics are an economic advantage in power operation. When fitted with a suitable positioning actuator, the valve can perform a dual purpose of modulating control and shut off.

The BATLEY Experience - reliable, well proven seal design provides bi-directional shut off

HYPERSEAL



Normal direction of flow

In the closed position without pressure there is a slight interference between the disc and the seat. The stainless steel support ring prevents any outward movement of the teflon seat, so retaining the sealing force. The seat is designed to move slightly in the direction of flow, this allows the pressure access to the back of the seat, thus making the seal progressively tighter as the pressure increases.

Any slight deflection on the disc in the case of very high pressures, increases the tightness and shut off potential.

Reverse direction of flow

In the closed position without pressure there is a slight interference between the disc and the seat. The stainless steel support ring prevents any outward movement of the seat, so retaining the sealing force. The seat is designed to move slightly in the direction of flow, this allows the pressure access to the back of the seat, thus making the seal progressively tighter as the pressure increases.

Any slight deflection of the disc in the case of very high pressures, would tend to reduce the tightness but the pressure behind the seat compensates to maintain the shut off.

Sizes 50mm to 1000mm CLASS 150LB

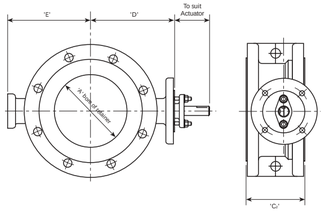
VALVE SIZE	A	B	C_1 WAFER	C_2 FLANGED	D	E	F	G	H	J	K	L	M
50	44	95	43	108	95	70	12	67	44	11	4	M8	49
80	69	129	47	114	120	95	15	67	44	11	4	M8	74
100	90	160	52	127	143	120	20	64	44	15	4	M10	96
125	117	186	56	140	165	145	20	67	44	15	4	M10	120
150	140	212	58	140	205	180	20	108	66	16	4	M12	143
200	189	270	64	152	238	210	25	108	66	16	4	M12	194
250	233	328	72	165	260	255	30	108	66	18	4	M16	240
300	284	383	81	178	300	285	35	108	66	18	4	M16	288
350	327	426	92	190	310	325	35	108	66	18	4	M16	317
400	377	474	102	216	320	340	40	108	66	32	4	M16	363
450	426	534	114	222	370	350	45	108	70	32	4	M20	409
500	472	590	127	229	418	410	45	165	97	17	8	M16	455
600	567	692	154	267	490	510	60	165	103	-	-	-	547
700	667	800	172	292	560	580	70	165	103	-	-	-	647
750	725	857	180	292	590	610	80	200	123	-	-	-	705
800	770	914	190	318	610	620	80	200	123	-	-	-	750
900	845	1025	241	330	620	630	90	200	123	-	-	-	835
1000	945	1120	241	410	630	640	100	200	123	-	-	-	925

Sizes 50mm to 1000mm CLASS 300LB

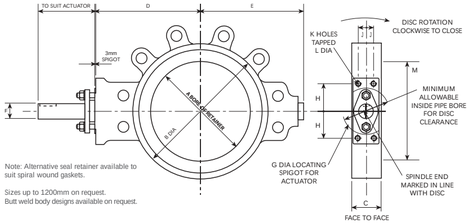
VALVE SIZE	A	B	C_1 WAFER	C_2 FLANGED	D	E	F	G	H	J	K	L	M
50	44	95	43	150	95	70	12	67	44	11	4	M8	49
80	69	129	47	180	120	95	15	67	44	11	4	M8	74
100	90	160	52	190	143	120	20	67	44	15	4	M10	96
125	117	186	56	200	165	145	20	67	44	15	4	M10	120
150	140	212	58	210	205	180	25	108	66	16	4	M12	143
200	189	270	64	230	238	210	30	108	66	16	4	M12	194
250	233	328	72	250	260	255	35	108	66	18	4	M16	240
300	284	383	81	270	300	285	40	165	66	18	4	M16	288
350	317	412	127	290	354	360	50	165	97	36	4	M16	317
400	363	469	146	310	386	410	60	165	103	17	8	M16	363
450	409	533	160	330	418	440	65	165	103	17	8	M16	409
500	455	584	165	350	450	480	70	165	103	17	8	M16	455
600	547	692	181	390	515	560	80	165	103	22	8	M16	547
700	647	800	220	430	580	590	90	165	103	-	-	-	647
750	705	857	241	430	610	620	100	200	123	-	-	-	705
800	745	914	260	470	630	640	110	200	130	-	-	-	750
900	825	1022	270	510	655	665	120	220	130	-	-	-	825
1000	925	1085	270	550	680	690	130	220	130	-	-	-	925

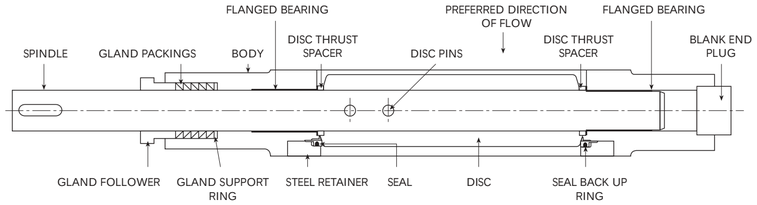
Dimensions shown as - on application.
API 609 Face to Face dimensions for 300lb valves available on request.

DOUBLE FLANGED



WAFER/LUGGED





COMPONENT	CARBON STEEL	316 ST STEEL	AL-BRONZE	DUPLEX
Body	A216 WCB	A351 CF8M	BS1400 AB2	A890 4A
Disc	A216 WCB/A351 CF8M	A351 CF8M	BS1400 AB2	A890 4A
Shaft	17-4PH/316 SS	17-4PH/316 SS	Monel	25 CR Duplex
Pins	316	316	Monel	25 CR Duplex
Gland Follower	St Steel	St Steel	St Steel	St Steel
Gland Studs, Nuts & Washers	St Steel	St Steel	St Steel	St Steel
Gland Packings	PTFE	PTFE	PTFE	PTFE
Gland Ring	316 SS	316 SS	Monel	25 CR Duplex
Bearings	316/PTFE	316/PTFE	Bronze/PTFE	PTFE
Disc Spacers	316 SS	316 SS	Monel	25 CR Duplex
Blank End Plug	Carbon Steel	316 SS	Monel	25 CR Duplex
Seal Retainer	Carbon Steel	316 SS	Al-Bronze	25 CR Duplex
Seal Back Up Ring	316 SS	316 SS	316 SS	25 CR Duplex
Seal	R-PTFE	R-PTFE	R-PTFE	R-PTFE

Alternative materials include: LCB, Monel, LG-2, Alloy 20, 316L, Titanium, Hastalloy, Inconel & Super Duplex.

Technical Standards

Design:	API 609, BS 5155, MSS SP68
Pressure Testing:	API 598, BS 6755 Part 1, FCI 70-2
Wall Thickness:	ANSI B16.34
Face To Face Dimensions:	BS 5155, API 609, DIN 3202, ISO 5752
Quality Assurance:	ISO 9001