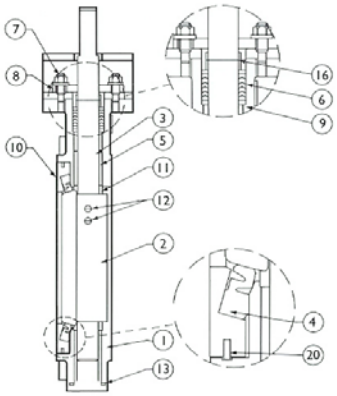
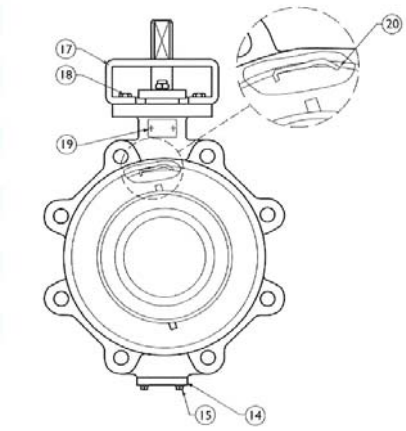
HIGH PERFORMANCE BUTTERFLY VALVES

Model CSWHB

Model SSWHB



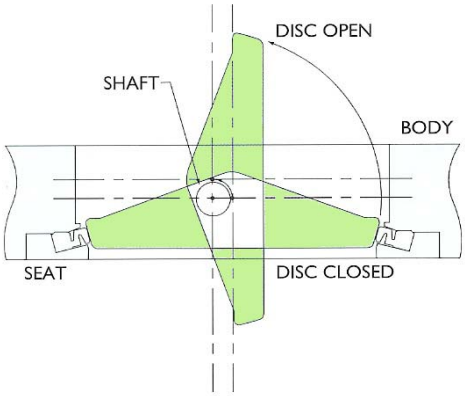


FEATURES

- Available in one-piece carbon steel or stainless steel body with lug or wafer style design
- Meet requirements for HVAC, oil, gas and industrial applications
- Pressure assisted seat design ensuring bubble-tight shut-off at all differential pressures
- Multiple V-Ring Teflon stem packing is adjustable and can be easily replaced without removal of actuator
- Four-bolt actuator mounting pad accepts all types of actuation
- Seat Retainer has uninterrupted gasket surface meeting API 609 requirements
- The stainless steel disc edge machined 360° assuring leak-proof positive shut-off
- No special tools required for removal of the seat retainer, making seat replacement simple

MATERIALS

Item	Part	Carbon Steel	Stainless Steel
1	Body	ASTM A216-WCB	ASTM A351-CF8M (316)
2	Disc	ASTM A351-CF8M (316)	ASTM A351-CF8M (316)
3	Shaft	ASTM A276-316	ASTM A276-316
4	Seat	PTFE/RPTFE	PTFE/RPTFE
5	Bushings	Composite Packed PTFE	Composite Packed PTFE
6	Packing	PTFE – V-Type	PTFE – V-Type
7	Packing Hardware	300 Series Stn. Stl.	300 Series Stn. Stl.
8	Gland Retainer	ASTM A216-WCB	ASTM A351-CF8M (316)
9	Inner Gland Ring	ASTM A276-316	ASTM A276-316
10	Seat Retainer	ASTM A351-CF8M (316)	ASTM A351-CF8M (316)
11	Thrust Washer	ASTM A276-316	ASTM A276-316
12	Disc Pin	ASTM A276-316	ASTM A276-316
13	O-Ring	Viton	Viton
14	End Cap	ASTM A351-CF8M (316)	ASTM A351-CF8M (316)
15	End Cap Hardware	300 Series Stn. Stl.	300 Series Stn. Stl.
16	Shaft Retainer Ring	ASTM A276-302	ASTM A276-302
17	Support	ASTM A216-WCB	ASTM A351-CF8M (316)
18	Support Hardware	Plated Carbon Steel	300 Series Stn. Stl.
19	Name Plate	300 Series Stn. Stl.	300 Series Stn. Stl.
20	Spring	Inconel X750	Inconel X750



The double offset shaft design assures bi-directional sealing throughout the full pressure range of the valve. The cam-like action produced by the offset disc effectively lifts the disc off the seat during the initial opening of the valve, thus reducing seat wear and eliminating seat deformation. When the disc is in the open position no contact exists with the valve seat. This effectively reduces operating torques while extending seat life.

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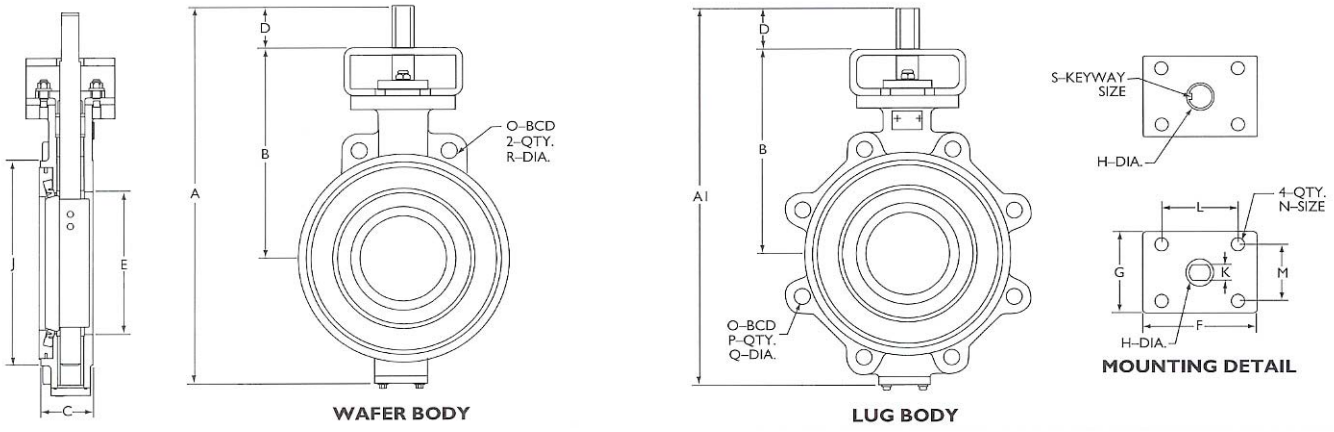


VALVE DIMENSIONS

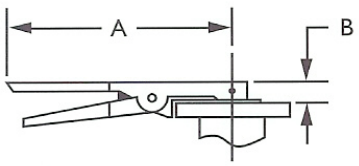
Size		A		A1		B		C		D		E		F	
mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in
65	2-1/2	277	10-7/8	277	10-7/8	168	6-5/8	48	1-7/8	25	1	70	2-3/4	90	3-9/16
75	3	298	11-3/4	298	11-3/4	178	7	48	1-7/8	25	1	86	3-3/8	90	3-9/16
100	4	353	13-7/8	365	14-3/8	217	8-1/2	54	2-1/8	25	1	109	4-5/16	90	3-9/16
150	6	410	16-1/8	421	16-1/2	248	9-3/4	57	2-1/4	25	1	159	6-1/4	135	5-5/16
200	8	476	18-3/4	489	19-1/4	270	10-5/8	64	2-1/2	44	1-3/4	210	8-1/4	135	5-5/16
250	10	578	22-3/4	600	23-5/8	311	12-1/4	71	2-13/16	74	2-15/16	262	10-5/16	135	5-5/16
300	12	667	26-1/4	695	27-3/8	365	14-3/8	81	3-3/16	77	3	311	12-1/4	125	4-15/16

Size		G		H		J		K		L		M		N	
mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in
65	2-1/2	70	2-3/4	14	9/16	112	4-13/32	10	3/8	83	3-1/4	38	1-1/2	9	11/32
75	3	70	2-3/4	14	9/16	132	5-3/16	10	3/8	83	3-1/4	38	1-1/2	9	11/32
100	4	70	2-3/4	16	5/8	162	6-3/8	13	1/2	89	3-1/2	51	2	10	13/32
150	6	95	3-3/4	22	7/8	217	8-9/16	16	5/8	89	3-1/2	51	2	10	13/32
200	8	95	3-3/4	29	1-1/8	270	10-5/8	22	7/8	102	4	64	2-1/2	14	9/16
250	10	95	3-3/4	29	1-1/8	325	12-13/16	22	7/8	121	4-3/4	83	3-1/4	14	9/16
300	12	95	3-3/4	32	1-1/4	387	15-1/4	--	--	127	5	89	3-1/2	18	11/16

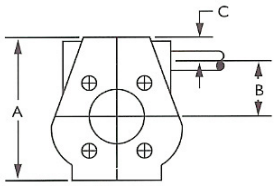
Size		O		P	Q	R		S	Valve Cv *
mm	in	mm	in			mm	in		
65	2-1/2	140	5-1/2	4	5/8"-11 UNC	18	11/16	--	90
75	3	152	6	4	5/8"-11 UNC	18	11/16	--	205
100	4	191	7-1/2	8	5/8"-11 UNC	18	11/16	--	403
150	6	241	9-1/2	8	3/4"-11 UNC	21	13/16	--	1075
200	8	298	11-3/4	8	3/4"-11 UNC	21	13/16	--	2243
250	10	362	14-1/4	12	7/8"-11 UNC	24	15/16	--	3885
300	12	432	17	12	7/8"-11 UNC	24	15/16	1/4" x 1-3/8"	5925

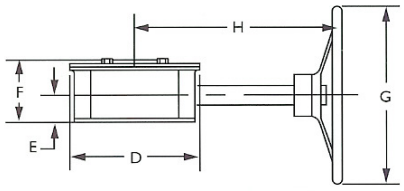
* Cv is defined as the gallon per minute of water that will flow through a given valve opening with a pressure drop of one (1) psi

HIGH PERFORMANCE BUTTERFLY VALVES



LEVER OPERATOR





GEAR OPERATOR

MANUAL ACTUATOR DIMENSIONS

Lever

Valve Size		A		B		WEIGHT	
mm	in	mm	in	mm	in	kg	lbs
65-100	2-1/2 – 4	267	10-1/2	32	1-1/4	0.9	2
150-300	6 - 12	359	14-1/8	50	1-31/32	2.3	5

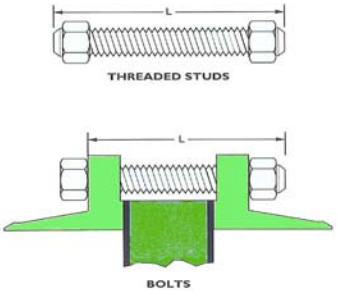
Gear

Valve Size		A		B		C		D		E		F		G		H		Weight	
mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	kg	lbs
65-150	2.5-6	127	5	44	1-3/4	29	1-1/8	105	4-1/8	33	1-3/8	67	2-5/8	152	6	194	7-5/8	4.7	10.4
200-300	8-12	178	7	67	2-5/8	35	1-3/8	152	6	43	1-5/8	86	3-3/8	305	12	268	10-1/2	12	26.5

REQUIRED BOLT LENGTHS

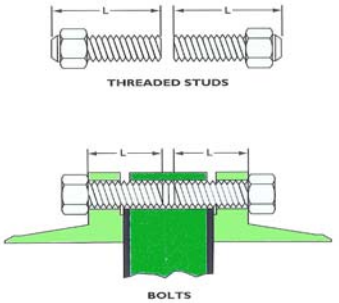
Wafer Body

			Length of Fasteners (L)	
Valve Size	Qty.	Bolt Size	Threaded Studs	Bolts
2-1/2"	4	5/8" - UNC	5-1/8"	4-5/8"
3"	4	5/8" - UNC	5-3/8"	4-5/8"
4"	8	5/8" - UNC	5-3/8"	4-7/8"
6"	8	3/4" - UNC	6-1/8"	5-3/8"
8"	8	3/4" - UNC	6-5/8"	5-7/8"
10"	12	7/8" - UNC	7-3/8"	6-3/8"
12"	12	7/8" - UNC	7-3/8"	7-1/8"



Lug Body

			Length of Fasteners (L)	
Valve Size	Qty.	Bolt Size	Threaded Studs	Bolts
2-1/2"	4	5/8" - UNC	2-5/8"	2-1/4"
3"	4	5/8" - UNC	2-3/4"	2-1/4"
4"	8	5/8" - UNC	2-7/8"	2-5/8"
6"	8	3/4" - UNC	3-1/8"	2-5/8"
8"	8	3/4" - UNC	3-3/8"	2-7/8"
10"	12	7/8" - UNC	3-3/4"	3-1/8"
12"	12	7/8" - UNC	4"	3-1/2"



VALVE WEIGHTS

Valve Size	2-1/2"	3"	4"	6"	8"	10"	12"
Wafer (Lbs.)	12	12	16	30	50	80	150
Wafer (Kg)	5.4	5.4	7.3	13.6	22.7	36.3	68
Lug (Lbs.)	17	17	23	42	70	112	210
Lug (Kg)	7.7	7.7	10.4	19.1	31.8	50.8	95.3

** Valve weights apply to valve body only

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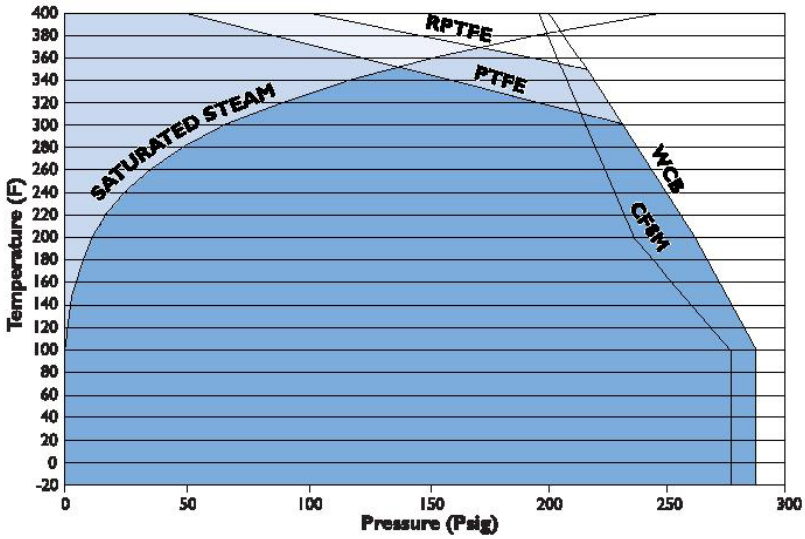
HIGH PERFORMANCE BUTTERFLY VALVES

PRESSURE AND TEMPERATURE RATINGS

Description	PMO (maximum operating pressure)	WSP (maximum working steam pressure)
Carbon Steel Body with PTFE seat	285 psi @ 100°F	70 psi @ 316°F
Stainless Steel Body with PTFE seat	275 psi @ 100°F	70 psi @ 316°F
Carbon Steel Body with RPTFE seat	285 psi @ 100°F	150 psi @ 366°F
Stainless Steel Body with RPTFE seat	275 psi @ 100°F	150 psi @ 366°F

PRESSURE TEMPERATURE CHART



VALVE BREAKAWAY TORQUE (in. – lbs.)

Valve Size		Differential Pressure (PSI)								
mm	in	0	25	50	75	100	150	200	250	300
65	2-1/2	100	115	120	135	150	165	170	180	195
75	3	150	165	175	185	190	198	205	218	225
100	4	185	200	215	245	270	315	380	435	525
150	6	270	340	400	475	540	680	800	935	1100
200	8	540	610	700	800	890	1200	1450	1650	1750
250	10	830	810	915	1100	1250	1550	1800	2000	2150
300	12	1000	1200	1350	1500	1650	1900	2200	2500	2750

Selection of actuator torque output must meet or exceed the maximum torque required by the valve
Under certain conditions, hydrodynamic torque can exceed the breakaway torque and must be considered in actuator selection

ORDERING CODES

	BODY MATERIAL	BODY TYPE	VALVE TYPE	-	DISC MATERIAL	SEAT MATERIAL	VALVE OPERATOR
Example:	**CS**	**W**	**HB**	**-**	**S**	**T**	**L**
	CS – Carbon Steel SS – Stainless Steel	W – Wafer L – Lug	HB – High Performance Butterfly		S – Stainless Steel	T – Teflon R – Reinforced Teflon	L – 10 Position Lever G – Handwheel Gear P – Pneumatic Actuator E – Electric Actuator B – No Operator, Bare Shaft

Colton has a policy of continuous product research and improvement and reserves the right to change design and specifications without notice