

Butterfly Valve - Series 200

Butterfly Valve design is the most common type of rotary valve and provides low weight to Cv Ratio combined with simplicity of design and comparatively low cost.

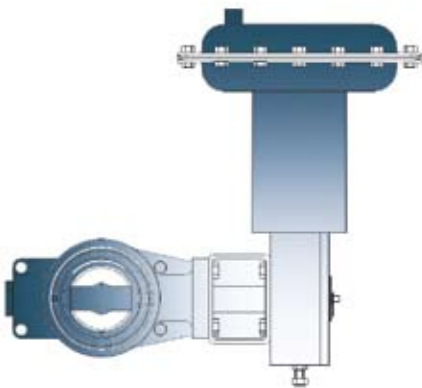
It is a simple device to control or block the flow, a single vane or wafer disc pivots in the valve body. They can be found on a wide variety of applications for throttling or two position control in

the chemical, paper and pulp, sugar industries, cooling water circulation, water treatment plants, compressed air, gas plant, flue gas desulphurisation plants etc.

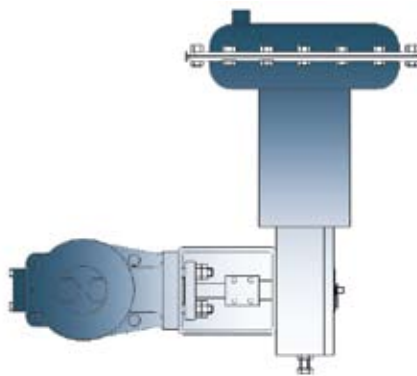
Butterfly Valves have been around the industry for decades, performing well defined tasks and are Economic alternative to Gate valves, Ball valves, Plug valves etc

Specification

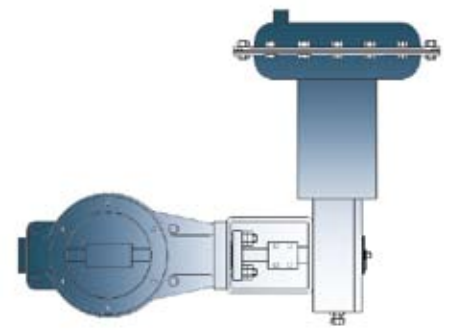
Design	Wafer	Actuator Form	Diaphragm, Piston, Electric
Size	50 to 900 mm (2" to 36")	Actuator Type	Rotary
Rating	50 to 900 mm (2" to 36")	Diaphragm	Nitrile / Neoprene
Flow Characteristic	Throttling, On-Off	Spring Range	3 – 15 Psig (0.2 – 1.0 Kg/cm ²) 6 – 30 Psig (0.4 – 2.0 Kg/cm ²)
Body Material	Cast Iron, Carbon Steel, Stainless Steel etc.	Air supply	20 – 35 Psig (1.4 – 2.5 Kg/cm ²)
Vane Material	Stainless Steel.	Air Connection	1/ 4" or 1/ 2" NPT
Body Sleeve	Neoprene, Nitrile, Teflon, EPDM, Silicon, Butyl, Viton etc.	Accessories	Valve Positioners - Pneumatic, Electro-Pneumatic, Smart Instruments - Airset, Solenoid Valve, Volume Booster, Airlock, Limit Switches Features - Top or Side Mounted handwheel, Limit Stops, Removable Blind Head, Steam Jacketing etc
Soft Seat	Teflon		
Gland Packing	PTFE V Rings up to 180C Grafoil up to 400C		



Butterfly Valve
Sleeved Design, Model 250



Butterfly Valve
Metal to Metal, Model 210 / 240



Butterfly Valve
Soft Seated, Model 230

Quality and Performance Guarantee

- Produced with Quality Systems accredited to ISO 9001 : 2008.
- Full material certification available for all major component Parts.
- Full guarantee on design and Performance.
- All testing are performed to the requirements of ANSI B16.34.
- Assured product quality.

Design Features

- Compact and simple design, low cost and maintenance free.
- Very high Cv to body size ratio.
- Reliable smooth operation and flow control.
- Replaceable elastomer liner.
- Bubble tight shut off, leakage Class – VI.
- Rangeability of 33:1 in the control range.
- Flow characteristic throttling for modulating duty.

Valve Sizing Co-efficient Cv Rating

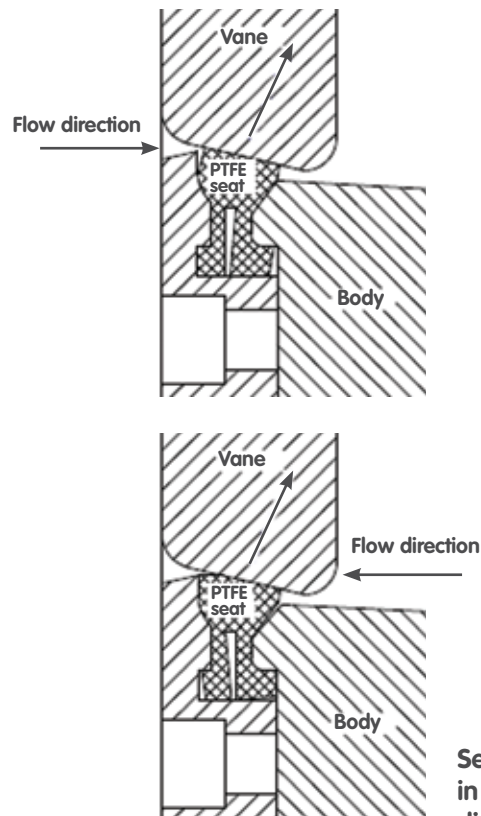
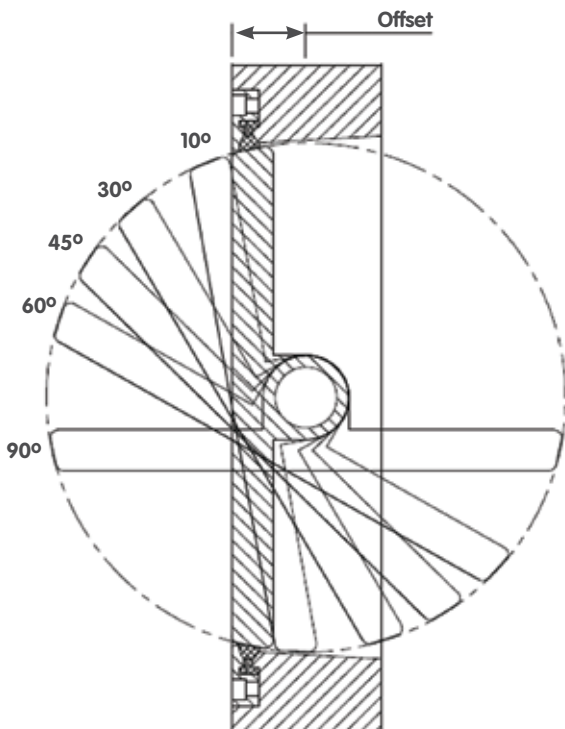
Valve size mm	50	65	80	100	125	150	200	250	300	350	400	450	500	600	750	900
Cv at full bore																
60°	68	125	170	275	425	650	1225	1900	2750	3250	4500	6000	7000	11000	16000	24000
90°	136	250	340	550	850	1300	2450	3800	5500	6500	9000	12000	14000	22000	32000	48000

Temperature Ratings for Sleeved Butterfly Valves

Elastomer	Temperature limits °C		Service
	Low limit	High limit	
Natural Rubber	-28	70	Air, Water
Neoprene	-17	80	Air, Water, Freon 12, 114
Nitrile (Buna N, Hycar)	-12	80	Freon 11, 12, 13, Air, Water, Alcohols, Aromatic hydrocarbon
Hypalon	-9	105	Acids, Alkalis
EDPM	-35	120	Acids, Alkalis, Steam
Butyl	-23	50	Acids, Alkalis, Steam, Alcohols
Viton	-6	200	Aromatic, Degreased, High Temp, Air and Gas
Silicon	-60	225	High Temperature Air

Temperature Ratings for Unlined Butterfly Valves

Body materials	Useful temperature rating
Cast Iron (A - 126 Class B)	-25 to 200C
Steel (Carbon Steel, WCB - 28C, LCB -45C)	-25 to 400C
Stainless Steel (CF8, CF8M)	-250 to 830C



Offset design indicating positions of valve opening

Sealing design in both flow directions

Sizing and Actuator Selection for Butterfly Valves

Metal to metal				Torque Required at α° $T\alpha^\circ = A \times \Delta P^\circ + B$				Maximum allowable torque for 304/316 shaft	Shaft dia	
Valve size		Cv in USGPM		A			B			
inch	mm	60°	90°	0	60	90	IN-LB	inch	mm	
2	50	65	130	0.2	1	2.75	36	225	1/2	14
2.1/2	65	120	240	0.3	1.86	5.26	36	225	1/2	14
3	80	160	320	0.44	4.14	9.04	36	225	1/2	14
4	100	280	560	1	7.4	21.4	50	430	5/8	16
5	125	430	860	1.56	14.06	41.36	50	430	5/8	16
6	150	640	1280	2.63	24.13	71.63	65	745	3/4	20
8	200	1200	2400	6.23	57.23	169.23	100	1764	1	25
10	250	1850	3700	9.81	109.81	329.81	100	1764	1	25
12	300	2700	5400	14.4	187.4	552.4	100	1764	1	25
14	350	3300	6600	27	272	790	184	3438	1.1/4	33
16	400	4400	8800	35.3	405.3	1195.3	184	3438	1.3/8	35
18	450	6250	12500	52.7	587.7	1762.7	232	5508	1.5/8	42
20	500	6900	13800	64.4	784.4	2374.4	235	5508	1.5/8	42
24	600	10000	20000	108	1368	4138	282	14130	2	50
30	750	16300	32600	212	2732	8262	396	26640	2.1/2	63
36	900	24200	48400	300	4580	14000	396	26640	2.1/2	63

Soft seated				Torque required at α° $T\alpha^\circ = A \times \Delta P^\circ + B$					Maximum allowable torque for 304/316 shaft	Shaft dia	
Valve size		Cv in USGPM		A			B				
inch	mm	60°	90°	0°	60°	90°	0°	10°-90°	IN-LB	inch	mm
2	50	65	130	0.2	1	2.75	75	36	225	1/2	14
2.1/2	65	120	240	0.3	1.86	5.26	75	36	225	1/2	14
3	80	160	320	0.44	4.14	9.04	75	36	225	1/2	14
4	100	280	560	1	7.4	21.4	100	50	430	5/8	16
5	125	430	860	1.88	14.38	41.68	120	65	745	3/4	20
6	150	640	1280	3.5	25	72.5	180	100	1764	1	25
8	200	1200	2400	6.23	57.23	169.23	250	140	1764	1.3/32	28
10	250	1850	3700	9.81	109.81	329.81	320	184	3440	1.3/8	35
12	300	2700	5400	14.4	187.4	552.4	320	184	5500	1.1/2	40
14	350	3300	6600	27	272	790	480	282	9500	1.3/4	45
16	400	4400	8800	35.3	405.3	1195.3	480	282	14130	2	50
18	450	6250	12500	52.7	587.7	1762.7	700	396	19700	2.1/4	55
20	500	6900	13800	91.9	811.9	2401.9	700	396	19700	2.1/4	55
24	600	10000	20000	135	1392	4138	700	396	26700	2.1/4	63
30	750	16300	32600	212	2732	8262	1000	396	26700	2.1/2	63
36	900	24200	48400	360	4640	14060	1000	520	53900	3	80

Available Torque for 90° Actuator (Lbc-in)

Actuator	Actuator Mode	Spring Range (Kg/cm ²)	C/C	Torque
55	PDS – 055-90°	0.2 to 1.0	33	183
95	PDS – 095-90°	0.2 to 1.0	33	316
140	PDS – 140-90°	0.2 to 1.0	49	691
140	PDS – 140G-90°	0.2 to 1.0	68.5	966
300	PDS – 140-90°	0.2 to 1.0	77.5	2343

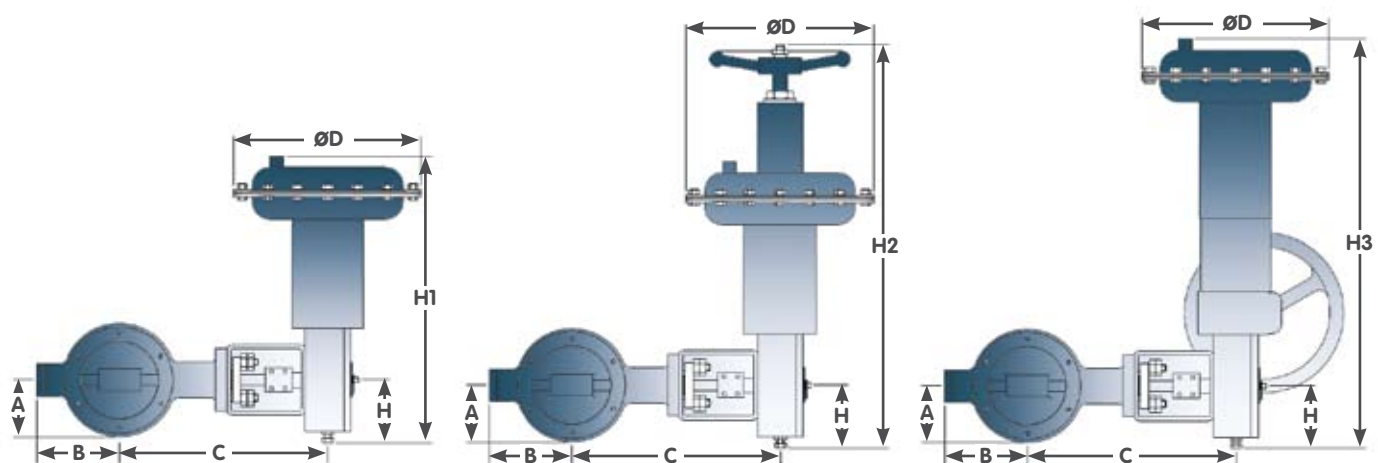
Available Torque for 60° Actuator (Lbc-in)

Actuator	Actuator Mode	Spring Range (Kg/cm ²)	C/C	Torque
55	PDS – 055-60°	0.2 to 1.0	45.5	252
95	PDS – 095-60°	0.2 to 1.0	45.5	436
140	PDS – 140-60°	0.2 to 1.0	68.5	966
140	PDS – 140G-60°	0.2 to 1.0	96.5	1361
300	PDS – 140-60°	0.2 to 1.0	105.5	3189

Note:- For spring range other than 0.2 – 1.0 kg/cm² multiply the Torque values by following factors>

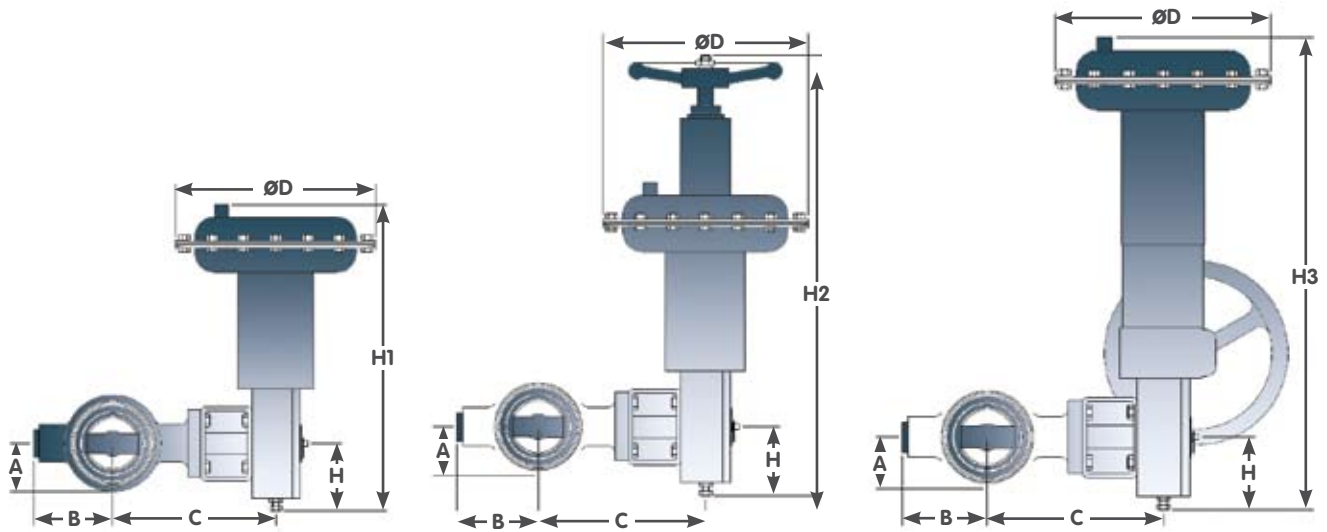
Spring Range (Kg/cm ²)	Multiple Factor
0.4 to 1.2	252
0.6 to 1.4	436
0.8 to 1.6	966

Dimensions of Soft Seated Butterfly Valves



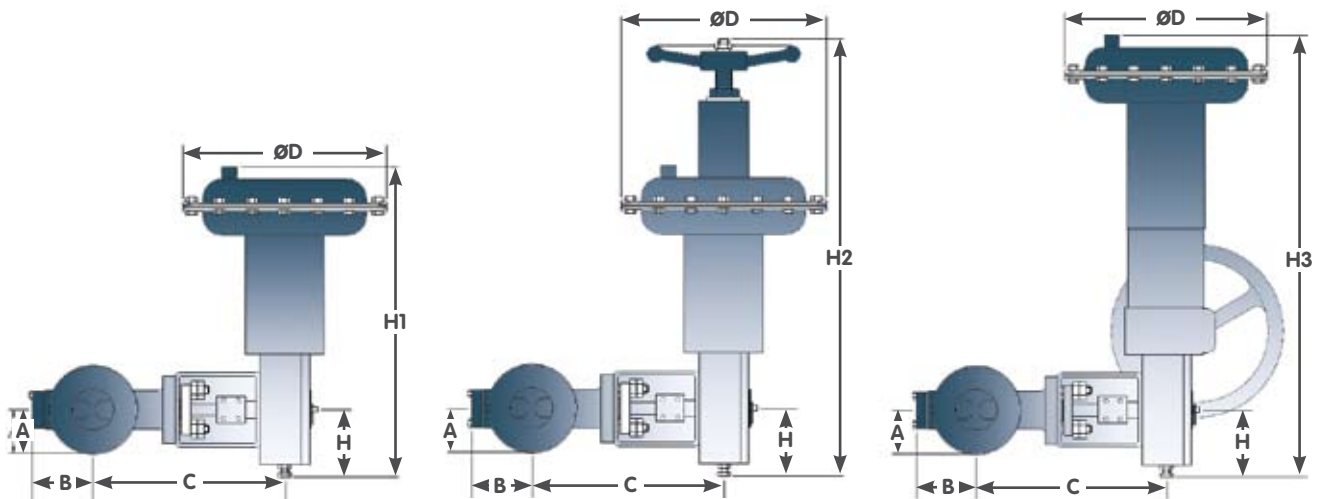
Valve size	Actuator model	F / F	A	B	C	D	H	H1 STD	H2 TMH	H3 SMH
50	PDS-055-90°	50	55	70	270	286	125	500	750	775
65	PDS-055-90°	48	60	85	280	286	125	500	750	775
80	PDS-055-90°	48	65	100	290	286	125	500	750	775
100	PDS-055-90°	54	80	125	315	286	125	500	750	775
150	PDS-055-90°	62	110	160	360	286	125	500	750	775
200	PDS-095-90°	69	135	175	425	371	125	525	775	800
250	PDS-140-90°	80	165	230	470	443	150	725	1075	1000
300	PDS-140-90°	82	195	250	525	443	150	725	1075	1000
350	PDS-140G-90°	92	215	280	570	443	175	825	1225	1150
400	PDS-140G-90°	102	245	305	600	443	175	825	1225	1150
450	PDS-300-90°	126	270	335	645	616	225	925	N/A	1300
500	PDS-300-90°	127	295	380	660	616	225	925	N/A	1300
600	PDS-300-90°	134	390	450	725	616	225	925	N/A	1300

Dimensions of Sleeved Type Butterfly Valves



Valve size	Actuator model	F / F	A	B	C	D	H	H1 STD	H2 TMH	H3 SMH
50	PDS-030-90°	49	46	100	195	218	110	370	620	645
65	PDS-055-90°	49	54	100	210	286	125	500	750	775
80	PDS-055-90°	50	62	110	215	286	125	500	750	775
100	PDS-055-90°	56	76	125	235	286	125	500	750	775
150	PDS-055-90°	56	105	160	260	286	125	500	750	775
200	PDS-095-90°	63	130	185	285	371	125	525	775	800
250	PDS-140-90°	73	156	225	350	443	150	725	1075	1000
300	PDS-140G-90°	83	185	250	380	443	175	825	1225	1150
350	PDS-140G-90°	83	200	285	420	443	175	825	1225	1150
400	PDS-300-90°	114	305	325	520	616	225	925	NA	1300
450	PDS-300-90°	126	340	355	550	616	225	925	NA	1300
500	PDS-300-90°	140	375	415	575	616	225	925	NA	1300
600	PDS-300-90°	168	430	455	650	616	225	925	NA	1300
Valve size	Actuator model	F / F	A	B	C	D	H	H1 STD	H2 TMH	H3 SMH
50	PDS-055-60°	47	54	75	255	286	135	550	800	825
65	PDS-055-60°	47	56	100	285	286	135	550	800	825
80	PDS-055-60°	47	65	100	285	286	135	550	800	825
100	PDS-055-60°	47	80	120	310	286	135	550	800	825
150	PDS-055-60°	56	110	150	360	286	135	550	800	825
200	PDS-095-60°	60	150	170	415	371	135	525	825	850
250	PDS-095-60°	65	170	225	450	371	135	725	825	850
300	PDS-140-60°	70	195	250	525	443	175	825	1075	1000
350	PDS-140-60°	70	210	290	565	443	175	825	1075	1000
400	PDS-140-60°	70	235	310	615	443	175	925	1075	1000
450	PDS-140G-60°	70	270	340	655	443	175	925	1175	1150
500	PDS-140G-90°	70	295	445	675	443	175	925	1175	1150
600	PDS-300-90°	168	430	455	650	616	225	925	NA	1300

Dimensions of Metal to Metal Butterfly Valves



Valve size	Actuator model	F / F	A	B	C	D	H STD	H1 TMH	H2 SMH	H3
50	PDS-030-90°	47	54	75	250	218	110	370	620	645
65	PDS-030-90°	47	56	100	280	218	125	370	620	645
80	PDS-030-90°	47	65	100	280	218	110	370	620	645
100	PDS-030-90°	47	80	120	305	218	110	370	620	645
150	PDS-055-90°	56	110	150	360	286	110	500	750	775
200	PDS-055-90°	60	150	170	415	286	110	500	750	775
250	PDS-095-90°	65	170	225	450	371	125	525	775	800
300	PDS-095-90°	70	195	250	505	371	125	525	775	800
350	PDS-140-90°	70	210	290	560	443	150	725	1075	1000
400	PDS-140-90°	114	235	310	610	443	150	725	1075	1000
450	PDS-140-90°	70	270	340	650	443	150	725	1075	1000
500	PDS-140G-90°	70	295	445	675	443	175	825	1225	1150
Valve size	Actuator model	F / F	A	B	C	D	H	H1 STD	H2 TMH	H3 SMH
50	PDS-030-60°	47	54	75	255	286	135	550	800	825
65	PDS-055-60°	47	56	100	285	286	135	550	800	825
80	PDS-055-60°	47	65	100	285	286	135	550	800	825
100	PDS-055-60°	47	80	120	310	286	135	550	800	825
150	PDS-055-60°	56	110	150	360	286	135	550	800	825
200	PDS-095-60°	60	150	170	415	371	135	575	825	850
250	PDS-095-60°	65	170	225	450	371	135	575	825	850
300	PDS-140-60°	70	195	250	525	443	175	725	1075	1000
350	PDS-140-60°	70	210	290	565	443	175	725	1075	1000
400	PDS-140-60°	70	235	310	615	443	175	725	1075	1000
450	PDS-140-60°	70	270	340	655	443	175	775	1175	1150
500	PDS-140G-90°	70	295	445	675	443	175	775	1175	1150