

ADREM™

HPB 3000



Dry Chlorine Service

**High Performance
Butterfly Valves**



Design Features:

- ◆ Double Offset and Eccentric Disc
- ◆ Chlorine Institute Pamphlet 6 Conformance
- ◆ Blow-out Proof Stem
- ◆ Double Set of Live Loaded PTFE Packing
- ◆ Energized MPTFE Disc Seat
- ◆ Fugitive Emissions Monitoring Port (Optional)
- ◆ Reduced Seat Wear and Deformation
- ◆ Solid Lower Body
- ◆ High Integrity Disc/Stem Connection
- ◆ Bi-directional Zero Leakage
- ◆ ISO 5211 Actuator Mounting Flange
- ◆ Superior Shaft Support and Alignment
- ◆ Low Operating Torque
- ◆ Lug and Wafer Bodies
- ◆ TA Luft VDI 2440 Section 5.2.6.4 Certified
- ◆ Environmentally Safe, Maintenance Free Design

HPB 3000	Standard Features	Optional Features
Body	A216 WCC, A352 LCC	316SS
Disc/Stem Material	Hastelloy C276	Monel 400
Temperature	-20°F to 400°F (WCC)	-50°F to 400°F (LCC)
Cleaning	Chlorine Cleaned	Oxygen Cleaned
Body Type	Lug Body	Wafer Body
Size	3" - 30"	
Application	Reliable Isolation & Control of Extremely Hazardous Liquids and Gases	
Conforming Standards	API 609, API 598, ASME B16.5, ASME B16.34/42, ISO 5211, PED 97/23/EG	
Stem Sealing	Live Loaded Mechanical Shaft Sealing System (Optional Leak Detection Port)	
Process Sealing	Bi-directional, Gas Tested, Bubble Tight per API 598/EN 12266-1-P12 Rate A	
External Coating	3 Component Epoxy Paint (WCC & LCC)	
Pressure Class	ANSI 150# & 300#	
Control Characteristics	Equal Percentage	

Chlorine and HCL Valves:

ADREM HPB 3000 series high performance butterfly valves feature the most advanced technology available for isolating and controlling industry's most hazardous process liquids and gases. Engineered to exceed industry's pertinent standards and Method 21 requirements of the Clean Air Act, the HPB 3000 valves incorporate design and sealing technologies that are essential in assuring reliable long term performance and environmental security. ADREM's HPB 3000 series valves are routinely specified to satisfy the stringent safety requirements associated with controlling and isolating **Dry, Liquid and Gaseous Chlorine as well as Anhydrous HCL.**

High integrity Stem Seal:

ADREM HPB 3000 series valves are designed to offer long-term, maintenance-free security against the harmful effects of fugitive emissions. The standard stem seal incorporates a double set of live loaded, virgin PTFE packing and radially loaded environmental o-ring seals that isolate bonnet and shaft.

Hazardous Services:

ADREM HPB 3000 series valves are routinely specified for hazardous services such as:

- ◆ Ammonia
- ◆ Dry Chlorine
- ◆ Ethylene Oxide
- ◆ Nitric Acid
- ◆ Anhydrous HCL
- ◆ Chlorine TriFluoride
- ◆ Fluorine
- ◆ Sulfur Chloride
- ◆ Anhydrous HF
- ◆ Chlorinated Solvents
- ◆ Isocyanates
- ◆ Vinyl Chloride Monomer
- ◆ Bromine
- ◆ Ethylene Dichloride
- ◆ Metal Alkyls
- ◆ Phosgene

HPB 3000

Sectioned Model

1 One Piece, High Strength, Blow Out Proof Shaft

2 Integrally Cast ISO Mounting Flange

3 Radial Loaded Atmospheric Seal

4 Mechanical Shaft Sealing System

5 Energized MPTFE Seat

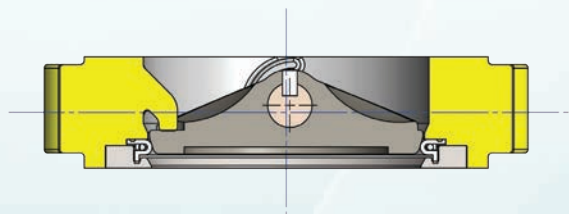
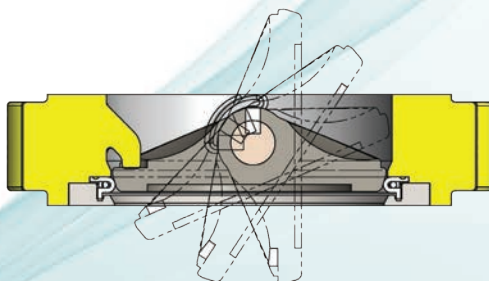
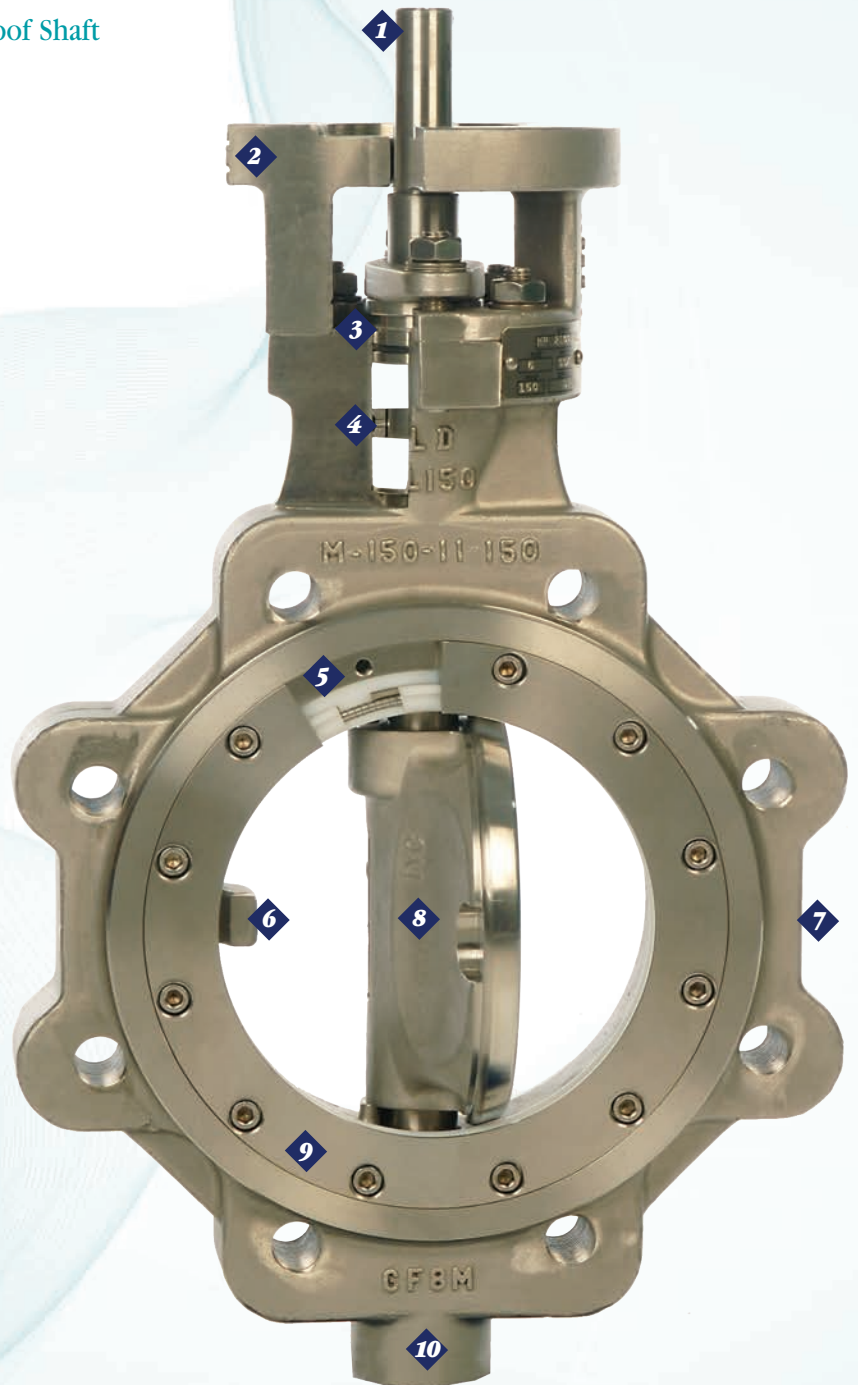
6 Integrally Cast Disc Travel Stop

7 High Integrity Industrial Grade Casting

8 Double Offset and Eccentric Design

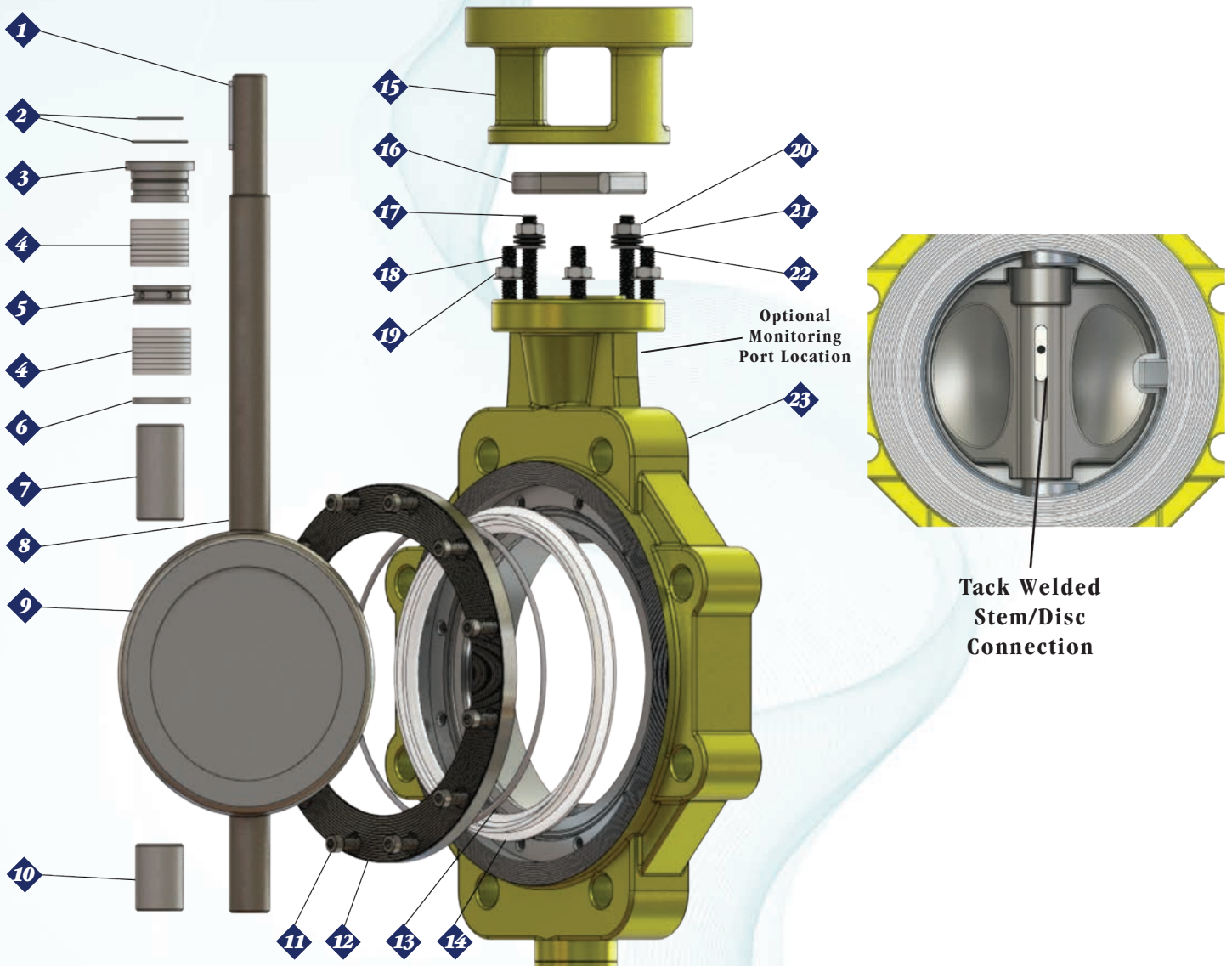
9 Seat Retainer Flange

10 Environmentally Safe Solid Lower Body



Double Eccentric Disc: Greatly reduces seat wear, increases seat life, ensures bi-directional sealing and reduces operating torque.

HPB 3000 Assembly Model



item #	Description	Std. Material	item #	Description	Std. Material
1	Shaft Key	C276	13	Seat Spring Energizer	Inconel 625
2	Atmospheric Seals	Viton	14	Seat	MPTFE
3	Gland Follower	C276	15	ISO Adaptor Flange	ASTMA 216 WCC
4	Packing Set	Virgin PTFE	16	Gland Flange	316SS
5	Lantern Ring	C276	17	Gland Stud Bolts	Teflon Ctd. ASTMA193 B7
6	Top Bearing Ring	C276	18	Mntg. Flange Stud Bolts*	Teflon Ctd. ASTMA193 B7
7	Top Shaft Bearing	PTFE/316 SS	19	Mntg. Flange Nuts*	Teflon Ctd. ASTMA194 2H
8	Stem	C276	20	Gland Stud Nuts	Alloy 20
9	Disc	C276	21	Belleville Washers	Inconel 718
10	Lower Shaft Bearing	PTFE/316 SS	22	Washers	Alloy 20
11	Seat Retainer Fasteners*	Alloy 20	23	Body	ASTMA 216 WCC
12	Seat Ring Carrier	EN 10025-2 S275J2			

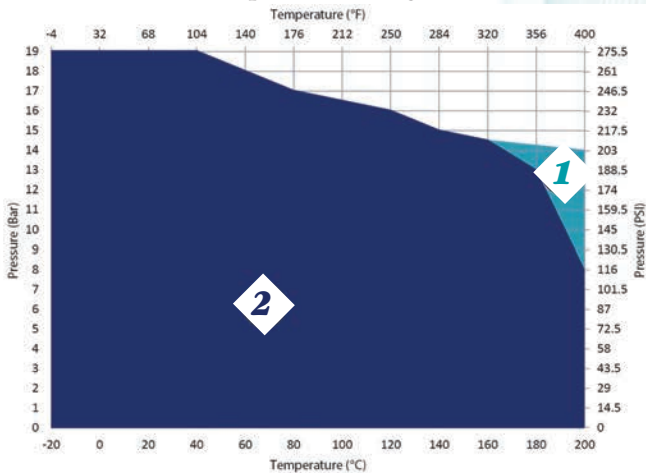
*Alloy 20 or C276 available upon request. **Other materials available upon request.

Break Torque / CV Values / Pressure - Temperature

Valve Size	Break Torque (In-Lb)						Max Allowable Shaft Torque (In-Lb)	
	Pressure (PSI)						150#	300#
	145	232	290	363	580	725		
3"	398	451	487	531	664	752	2,000	2,000
4"	531	584	620	664	797	885	2,000	2,000
6"	974	1,257	1,443	1,673	2,372	2,832	5,824	5,824
8"	1,859	2,460	2,859	3,354	4,850	5,850	5,824	12,789
10"	3,717	4,620	5,231	5,983	8,249	9,753	12,789	21,667
12"	5,337	6,249	6,939	7,921	11,745	15,276	21,667	39,917
14"	6,797	9,382	11,099	13,249	19,702	24,003	39,917	80,444
16"	8,851	12,621	15,135	18,277	27,703	33,987	80,444	114,546
18"	12,479	17,993	21,667	26,260	40,041	49,228	114,546	141,930
20"	15,577	22,817	27,650	33,686	51,794	63,867	141,930	238,960
24"	25,844	37,996	46,094	57,813	86,595	106,846	238,960	386,581

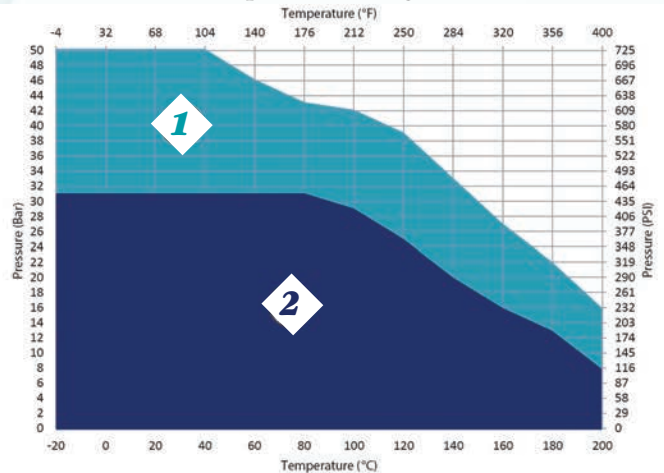
Valve Size	CV Values Based on Degrees Open and Valve Size								
	10°	20°	30°	40°	50°	60°	70°	80°	90°
3"	0.10	13	66	73	87	112	130	149	149
4"	2	30	101	102	147	191	246	286	269
6"	17	74	136	229	391	571	771	1,070	2,330
8"	43	142	256	404	673	1,011	1,449	2,010	2,554
10"	50	240	448	750	1,173	1,675	2,293	3,043	3,741
12"	89	393	744	1,196	1,861	2,642	3,585	4,919	6,279
14"	183	440	879	1,282	2,124	3,150	4,395	5,787	7,325
16"	234	563	1,125	1,641	2,716	4,032	5,626	7,407	9,376
18"	270	649	1,298	1,893	3,136	4,650	6,489	8,544	10,815
20"	354	850	1,700	2,478	4,107	6,090	8,498	11,188	14,163
24"	536	1,285	2,571	3,749	6,213	9,212	12,854	16,832	21,424

Pressure - Temperature Diagram 150# Class



1) 3"-8" 2) 10"-24"

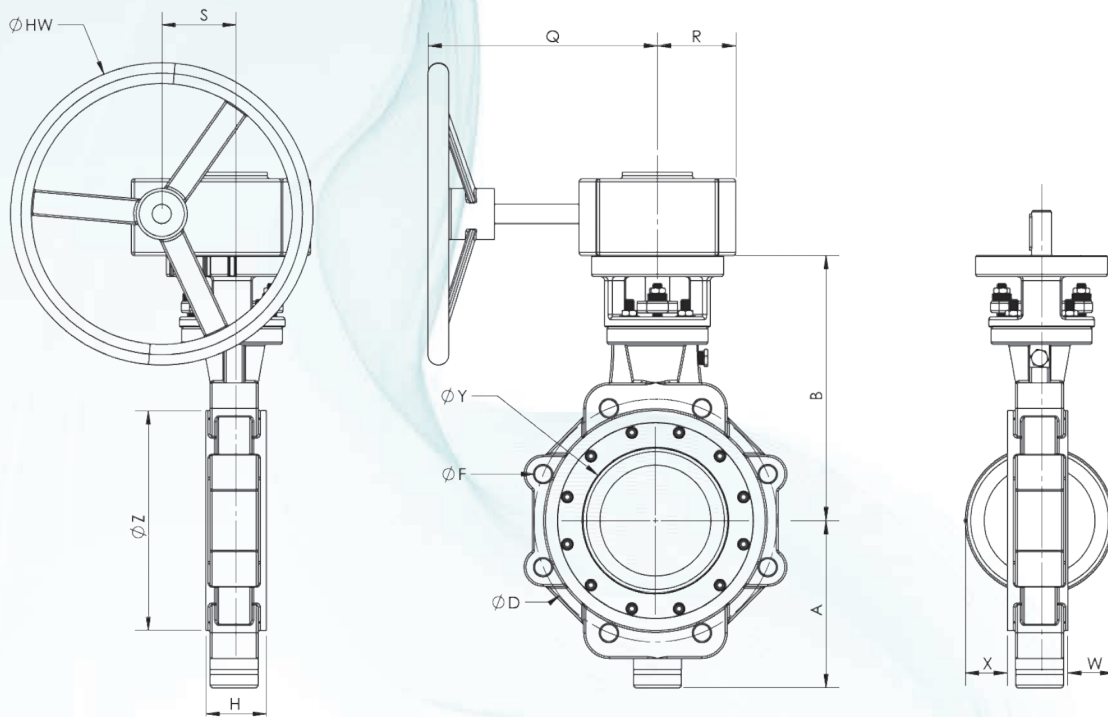
Pressure - Temperature Diagram 300# Class



1) 3"-8" 2) 10"-24"

*Material = WCC

Dimensions



ANSI 150# Class

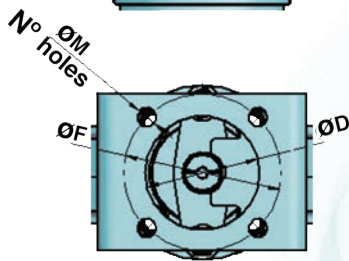
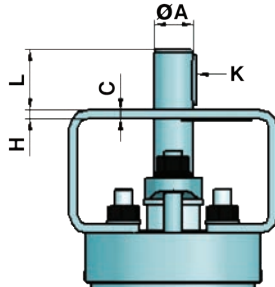
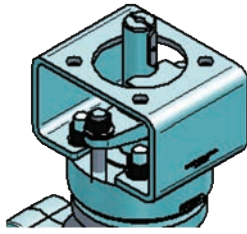
Size	A	B	ϕD	$N \times \phi F$	H	Q	R	S	ϕHW	W	X	ϕY	ϕZ	Weight
3"	5.16	9.45	6.00	4x5/8"-11 UNC	1.97	9.50	2.56	2.08	10.24	0.55	0.46	2.94	5.00	32.00
4"	5.45	10.93	7.50	8x5/8"-11 UNC	2.19	9.50	3.15	2.08	10.24	0.787	0.59	3.43	6.18	38.00
6"	6.61	12.60	9.50	8x3/4"-10 UNC	2.36	9.65	3.15	2.56	10.24	1.85	1.61	5.67	8.58	66.00
8"	7.64	13.44	11.75	8x3/4"-10 UNC	2.64	10.83	3.15	2.56	10.24	2.72	2.44	7.63	10.67	88.00
10"	9.61	16.08	14.25	12x7/8"-9 UNC	2.83	16.38	3.86	3.86	12.60	3.50	3.07	9.28	12.76	163.00
12"	10.91	17.89	17.00	12x7/8"-9 UNC	3.31	16.14	6.26	5.98	19.70	4.29	3.78	11.26	15.00	266.00
14"	11.93	20.71	18.75	12x1"-8 UNC	3.62	20.08	6.18	5.98	19.70	4.65	3.97	12.24	17.04	304.00
16"	13.27	22.68	21.25	16x1"-8 UNC	4.02	13.20	6.18	5.98	29.50	5.51	4.88	14.29	19.29	454.00
18"	14.61	25.59	22.75	16x1-1/8"-8 UNC	4.49	11.80	6.18	5.98	29.50	6.46	5.47	16.30	21.49	483.00
20"	15.87	27.80	25.00	20x1-1/8"-8 UNC	5.00	15.30	5.63	5.12	19.70	7.01	6.30	19.13	23.50	734.00
24"	18.86	31.38	29.50	20x1-1/4"-8 UNC	6.06	18.35	5.63	8.31	19.70	8.39	7.71	22.17	28.03	1,118.00

ANSI 300# Class

Size	A	B	ϕD	$N \times \phi F$	H	Q	R	S	ϕHW	W	X	ϕY	ϕZ	Weight
3"	5.16	9.45	6.00	4x3/4"-10 UNC	1.97	9.50	2.56	2.09	10.24	0.55	0.50	2.94	5.00	32.00
4"	5.45	10.92	7.50	8x3/4"-10 UNC	2.19	9.50	2.56	2.09	10.24	0.787	0.59	3.45	6.18	38.00
6"	6.61	12.60	9.50	8x3/4"-10 UNC	2.36	9.65	3.15	2.56	10.24	1.85	1.61	5.67	8.58	77.00
8"	8.30	14.40	11.75	12x7/8"-9 UNC	2.99	10.83	3.86	3.86	12.60	2.48	2.32	7.63	10.67	128.00
10"	11.43	18.05	14.25	16x1"-8 UNC	3.39	16.38	6.30	5.98	29.50	3.15	2.91	9.28	12.76	294.00
12"	11.61	20.19	17.00	16x1-1/8"-8 UNC	3.70	16.15	6.18	5.98	19.69	4.09	3.62	11.26	15.00	327.00
14"	13.22	23.70	18.75	16x1-1/8"-8 UNC	4.61	20.08	6.18	5.98	29.50	3.90	3.74	12.24	17.04	542.00
16"	14.84	26.80	21.25	20x1-1/4"-8 UNC	5.24	13.20	5.63	8.31	19.69	4.92	4.29	14.30	19.29	721.00
18"	16.1	28.31	22.75	24x1-1/4"-8 UNC	5.87	12.00	6.50	7.17	15.75	5.55	5.04	16.30	21.50	926.00
20"	17.44	30.60	25.00	24x1-1/4"-8 UNC	6.26	15.30	6.50	10.35	15.75	6.18	5.91	19.13	23.50	1,226.00
24"	19.6	32.71	29.50	24x1-1/4"-8 UNC	7.13	18.35	6.50	14.06	15.75	7.32	7.72	22.17	28.03	1,641.00

NOTE: Dimensions in Inches. Weight in Pounds. Wafer Valves will have Drilled Through Bolt Holes.

ISO Mounting Flange



NPS - CLASS	DN - PN	ISO 5211	ØD	ØA	L	K	Nº holes	ØM	ØF	H	C
4" 150#	100 PN 10/16	F07	56	17	43	5x5x36	4	9	70	5	5
4" 300#	100 PN 25/40	F07	56	17	43	5x5x36	4	9	70	5	5
6" 150#	150 PN 10/16	F10	71.5	24	40	8x7x36	4	11	102	5	5
6" 300#	150 PN 25/40	F10	71.5	24	40	8x7x36	4	11	102	5	5
8" 150#	200 PN 10/16	F10	71.5	24	40	8x7x36	4	11	102	5	5
8" 300#	200 PN 25/40	F12	86.5	30	54	10x8x45	4	13	125	6	6
10" 150#	250 PN 10/16	F12	86.5	30	54	10x8x45	4	13	125	6	6
10" 300#	250 PN 25/40	F14	101.5	35	54	10x8x45	4	17	140	8	8
12" 150#	300 PN 10/16	F14	101.5	35	54	10x8x45	4	17	140	8	8
12" 300#	300 PN 25/40	F16	131.5	42	71	12x8x56	4	21	165	10	10
14" 150#	350 PN 10/16	F16	131.5	42	71	12x8x56	4	21	165	10	10
14" 300#	350 PN 25/40	F25	201.5	52	80	16x10x70	8	17	254	10	10
16" 150#	400 PN 10/16	F16	131.5	52	80	14x9x70	4	21	165	10	10
16" 300#	400 PN 25/40	F25	201.5	58	80	16x10x70	8	17	254	10	10
18" 150#	450 PN 10/16	F16	131.5	58	80	18x11x70	4	21	165	10	10
18" 300#	450 PN 25/40	F25	201.5	62	90	18x11x80	8	17	254	10	10
20" 150#	500 PN 10/16	F25	201.5	62	90	18x11x80	8	17	254	10	10
20" 300#	500 PN 25/40	F30	231.5	73	100	20x12x80	8	21	298	15	15
24" 150#	600 PN 10/16	F25	201.5	73	100	20x12x80	8	17	254	15	15
24" 300#	600 PN 25/40	F30	231.5	85	110	22x14x100	8	21	298	15	15

* millimeters

Control Valve Accessories



Actuator/ Position Indicator with Beacon Indicator



Instrument Enclosure



Actuator/ Pneumatic Positioner



Electro-Pneumatic Positioner with Gauges



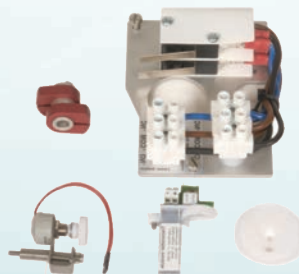
Pneumatic Positioner



Digital Positioner with Gauges



Position Indicator with Beacon Indicator



Feedback Module



Pressure Regulator with Gauge

HPB 3000 SERIES

Ordering Information

1-Valve

HPB 3000

2-Size

3" - 30"

3-Rating

R1 - ANSI 150#
R2 - ANSI 300#

4-Body Style

L - Lug
W - Wafer

5-Body Material

SC - A216 WCC (-20°F)
LC - A352 LCC (-50°F)
SS - A351 CF8M (-50°F)
ML - A494 Monel (-50°F)
AY - A494 Alloy 20 (-50°F)

6-Stem/Disc

S1 - Hastelloy C
S2 - Monel
S3 - 316 SS
S4 - Alloy 20

7-Seats

M1 - MPTFE
M2 - GF/PTFE

8-Packing

P1 - Virgin PTFE
P2 - Graphite

LC = Low Temperature Carbon Steel

9-Cleaning

CL - Chlorine
CX - Peroxide
CO - Oxygen

10-Operator

BS - Bare Stem
LH - Locking Handle
MG - Manual Gear
DA - DA Actuator
FC - FC Actuator
FO - FO Actuator

11-Accessories

PS - Proximity Switch
MS - Micro Switch
PP - Pneumatic Positioner
EP - Electro Pneumatic Positioner
PD - Digital Positioner
PR - Pressure Regulator
SV - Solenoid Valve

12-Options

01 - Fugitive Emissions Monitoring Port w/Plug

* MPTFE = Molecular/Mechanically Enhanced PTFE

** Carbon steel bodies should only be used if the process conditions contain <30ppm moisture

*** Other materials available upon request

ADREM is a trademark of
Severe Service Specialists, Inc.

ADREM™

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