SERIES PVA

HEAVY DUTY PINCH VALVES

TECHNICAL SALES MANUAL



Bray®

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THE HIGH PERFORMANCE COMPANY

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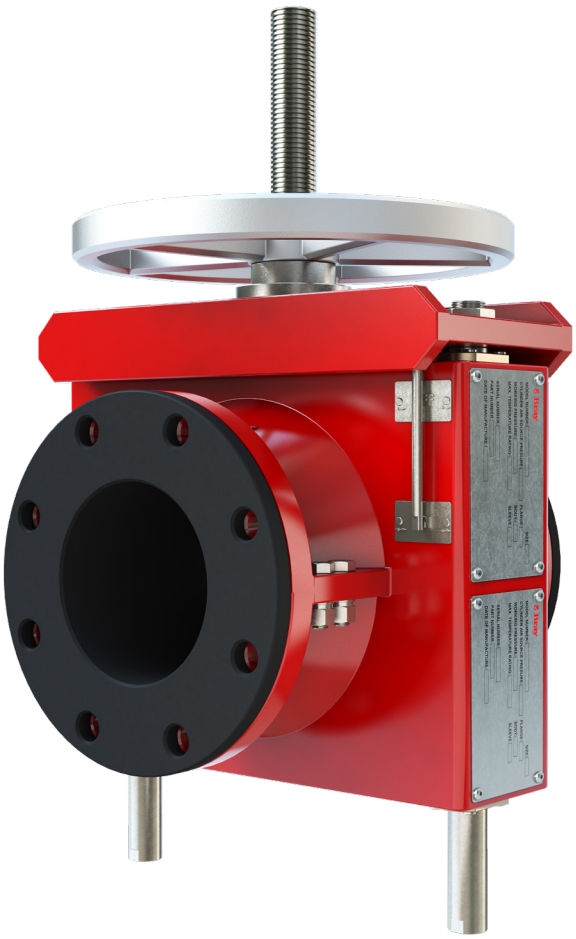
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OVERVIEW

Series PVA is a bidirectional heavy duty pinch valve engineered for demanding applications. The pinch valve design enables customers to isolate as well as control in slurry and abrasive applications.

The body is offered in open or enclosed body design. When fully open, the valve is full bore—offering no resistance to line media and importantly, no potential leak paths to the environment.

The Bray PVA is a packingless, non-discharge valve that minimizes maintenance requirements and environmental impacts.



INDUSTRIES

- Mining & Mineral Processing
- Chemical Industry
- Power
- Water & Wastewater
- Pulp & Paper
- Battery Manufacturing & Battery Recycling
- Food & Beverage

APPLICATIONS

- Grinding & Milling, Flotation
- Thickeners
- Filter Pump, Tailings & Paste Backfill
- Bulk Material HandlingApplication 2
- Slurry, Strong Acid and Alkali Solutions
- Dosing
- Powder Particles
- Industrial Processing
- Ash Removal
- Bottom Ash Treatment
- Desulfurization and Denitrification
- Sludge Handling & Control
- Lime Dosing
- Grit Removal & Raw Sewage
- Raw Paper Stock
- Kaolin Clay Coatings
- Starch
- Bleaching

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SPECIFICATIONS

Size Range	NPS 1/2 to 36 / DN 15 to 900
Temperature Range	Nat. Rubber: -22°F to 176°F | -30°C to 80°C
	Buna-N: 14°F to 176°F | -10°C to 80°C
	EPDM: -22°F to 212°F | -30°C to 100°C
	CSM: 14°F to 194°F | -10°C to 90°C
	FKM: 14°F to 194°F | -10°C to 90°C
	Chlorobuytl: 14°F to 176°F | -10°C to 80°C |
Pressure Rating	Open Body: 232psi / 16bar
	Enclosed Body: 232psi / 16bar 363 psi / 25 bar
Body Style	Open Body
	Enclosed Body

STANDARD CONSTRUCTION

Body	Cast Ductile Iron
Sleeve	Natural Rubber
Stem	Manual: Stainless Steel
	Automated: Chrome-plated Steel
Fasteners	Stainless Steel

MATERIAL OPTIONS

Body	Ductile Iron
	Carbon Steel WCB
	Stainless Steel CF8
	Stainless Steel CF8M
Sleeve	Natural Rubber
	EPDM
	Nitrile (Buna-N)
	FKM
	Hypalon (CSM)
	Chlorobuytl Rubber
Stem	Chrome-plated Steel
	Stainless Steel
Fasteners	Stainless Steel

NOTES
1 Additional material options may be available upon request. Consult factory for availability.

ACTUATOR OPTIONS

Handwheel	Standard: NPS ½ to 8 | DN 15 to 200
Bevel Gear	Standard: NPS 10 to 36 | DN 250 to 900
Pneumatic	
Electric	
Hydraulic	

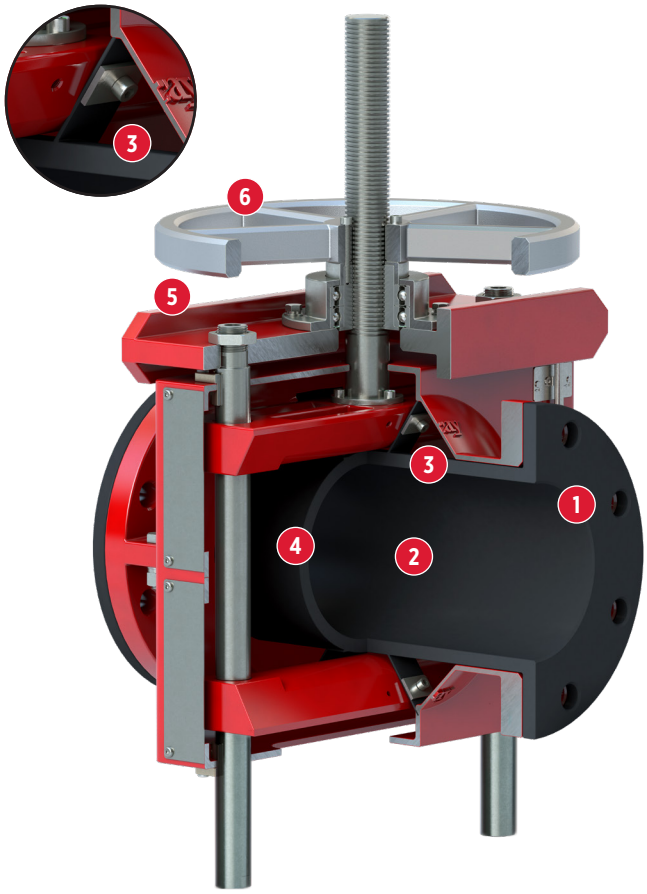
DESIGN STANDARDS

Valve Design	ISA 75.10.01 & Manufacturer standard
Isolation Shutoff	Zero Leakage
End Connections	ASME 150, ASME 300, AS Table D, AS Table E, DIN PN10, PN16, PN 25, SANS PN10, PN16, PN 25
Face-to-Face	ISA 75.10.02 & Manufacturer Standard
Testing Standard	Manufacturer Standard

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FEATURES

1. **ROBUST HEAVY DUTY SLEEVE:** Features a triple layer reinforced construction to deliver extended service life.
2. **FULL-BORE, UNOBSTRUCTED FLOW PATH:** When fully open, the full-bore design offers no resistance to line media and no external leak paths.
3. **QUICK RESPONSE LIFTING TABS:** Enable quick opening, even in low pressure applications.
4. **SLEEVE MATERIAL OPTIONS:** Available to handle a wide range of applications, from abrasion resistance to chemical compatibility.
5. **OPEN OR ENCLOSED BODY DESIGNS:** Available to meet installation and operation requirements.
6. **ACTUATION & CONTROL OPTIONS:** Including manual, pneumatic, hydraulic, or electric operators with positioners, switches, solenoids, and filter regulators.



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ADDITIONAL FEATURES

Triple-Layer Sleeve

Inner Layer

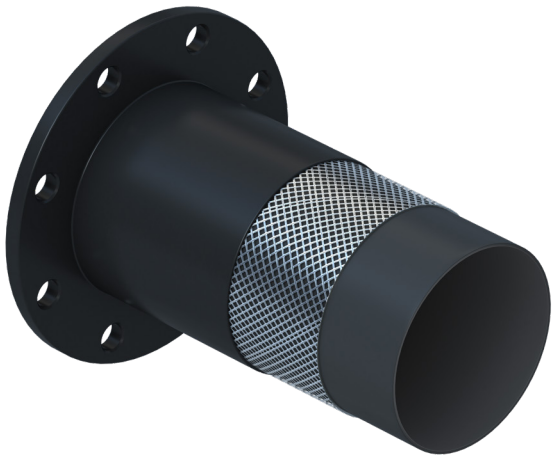
The inner elastomer layer is in direct contact with the process media, providing chemical compatibility, abrasion resistance, and a smooth flow passage.

Reinforcement Layer

The middle reinforcement layer provides structural strength, helping the sleeve withstand internal pressure while maintaining flexibility during repeated opening and closing cycles.

Outer Layer

The outer elastomer layer protects the reinforcement and inner layers from the elements and interacts directly with the pinch bars As the pinch bars apply controlled pressure, the outer layer transfers the compressive force evenly through the sleeve, supporting reliable closure, sealing performance, and durability during repeated operating cycles.



	Natural Rubber	EPDM	Nitrile	FKM	Hypalon (CSM)	Chlorobutyl Rubber
Best For	Abrasion and Tear Resistance	Water, weather, temperature resistance, general chemical resistance	Oils, fuels, and grease	Acids, chemicals, and hydrocarbons	Weather, ozone, strong oxidizing, chemicals	Gas resistance and low permeability. Acid and alkali resistance
Recommended Media	Abrasive slurries, minerals, water, powders	Water, wastewater, dilute acids and alkalis	Oils, diesel, lubricants, oily water	Fuels, oils, acids, hydrocarbons	Acids, alkalis, salts, oxidizing solutions	Water, acids, alkalis, glycol
Not Recommended For	Oils, fuels, solvents, strong oxidizers	Oils, fuels, and hydrocarbon solvents	Steam, ketones, esters, strong oxidizers	Ketones, hot steam, and some amines	Aromatic and chlorinated solvents	Aromatic solvents and petroleum fuels
Application Examples	Mining, tailings, sand, mineral processing	Acidic or alkaline slurries, water treatment, wastewater, chemical service	Oily water & sludge, petroleum, animal fats, flocculant	Acidic slurries, chemical plants, fuel handling	Pulp and paper, chemical processing, outdoor service	Chemical processing, pharmaceutical, water treatment
Temperature (°F)	-22 to 176	-22 to 212	14 to 176	14 to 194	14 to 194	14 to 176
Temperature (°C)	-30 to 80	-30 to 100	-10 to 80	-10 to 90	-10 to 90	-10 to 80

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BODY STYLE

Enclosed Body	NPS 0.5 - 24
	DN 15 - DN 600
	16 Bar & 25 Bar
Open Body	NPS 0.5 - 24
	DN 15 - DN 600
	16 Bar

ACTUATOR OPTIONS



HANDWHEEL



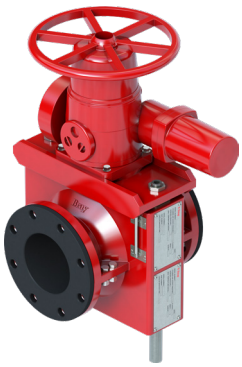
BEVEL GEAR



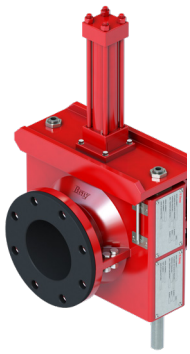
PNEUMATIC DA



PNEUMATIC SR



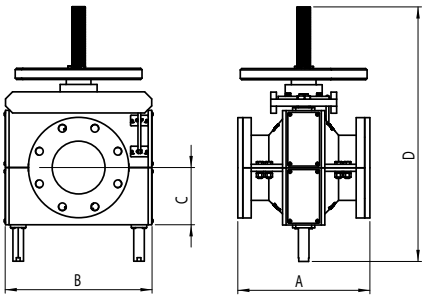
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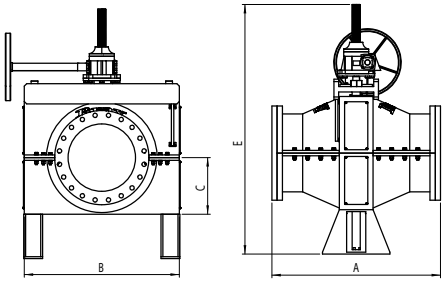
HYDRAULIC DA

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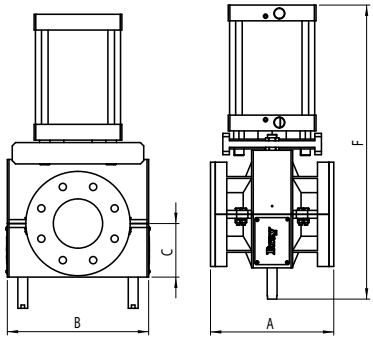
PVA 16 BAR ENCLOSED BODY



Handwheel



Bevel Gear



Pneumatic

IMPERIAL

NPS	A	B	C	D	E	F	Manual Weight	Pneumatic Weight
1	165	200	65	300	-	400	35.3 lb	33.1 lb
2	165	230	86	341	-	574	50.7 lb	52.9 lb
2.5	165	280	98	403	-	645	75.0 lb	77.2 lb
3	200	310	106	447	-	694	92.6 lb	99.2 lb
4	250	340	126	509	-	748	112.4 lb	136.7 lb
5	310	390	142	540	-	781	187.4 lb	202.8 lb
6	375	430	163	580	-	887	194.0 lb	487.2 lb
8	500	515	190	648	-	997	343.9 lb	599.7 lb
10	625	581	234	747	-	1130	542.3 lb	1064.8 lb
12	750	655	270	834	-	1243	895.1 lb	1774.7 lb
14	CF	1090	320	-	1260	1310	1067.0 lb	1995.2 lb
16	CF	1110	340	-	1320	1380	1624.8 lb	3351.0 lb
18	CF	1160	390	-	1390		1995.2 lb	CF
20	CF	1240	440	-	1430		2425.1 lb	CF
24	CF	1390	510	-	1520		2667.6 lb	CF

METRIC

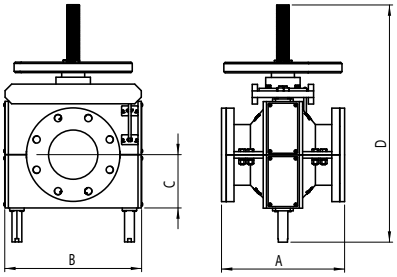
DN	A	B	C	D	E	F	Manual Weight	Pneumatic Weight
25	165	200	65	300	-	400	16 kg	15 kg
50	165	230	86	341	-	574	23 kg	24 kg
65	165	280	98	403	-	645	34 kg	35 kg
80	200	310	106	447	-	694	42 kg	45 kg
100	250	340	126	509	-	748	51 kg	62 kg
125	310	390	142	540	-	781	85 kg	92 kg
150	375	430	163	580	-	887	88 kg	221 kg
200	500	515	190	648	-	997	156 kg	272 kg
250	625	581	234	747	-	1130	246 kg	483 kg
300	750	655	270	834	-	1243	406 kg	805 kg
350	CF	1090	320	-	1260	1310	484 kg	905 kg
400	CF	1110	340	-	1320	1380	737 kg	1520 kg
450	CF	1160	390	-	1390		905 kg	CF
500	CF	1240	440	-	1430		1100 kg	CF
600	CF	1390	510	-	1520		1210 kg	CF

NOTES

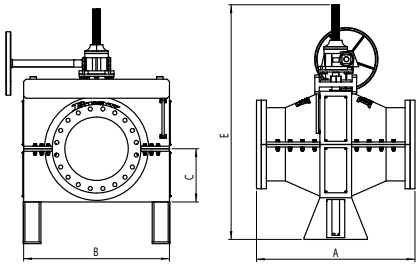
1 PVA sizes NPS 1 (DN25) through NPS 12 (DN300) will use the handwheel; sizes NPS 14 (DN 350) through NPS 24 (DN600) inches will use the bevel gear.

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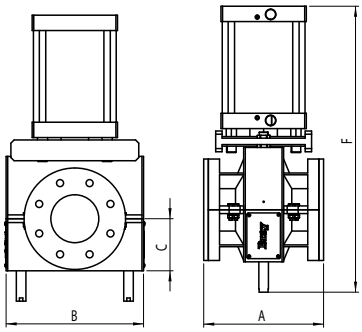
PVA 16 BAR OPEN BODY



Handwheel



Bevel Gear



Pneumatic

IMPERIAL WEIGHTS

NPS	A	B	C	Handwheel	Bevel Gear	Pneumatic	Manual Weight	Pneumatic Weight
1	165	210	40	311	-	455	28.7 lb	26.5 lb
2	165	240	70	340	-	485	44.1 lb	44.1 lb
2.5	165	255	85	356	-	500	61.7 lb	63.9 lb
3	200	270	100	370	-	525	77.2 lb	83.8 lb
4	250	285	115	386	-	560	94.8 lb	114.6 lb
5	310	340	130	446	-	630	158.7 lb	172.0 lb
6	375	400	155	500	-	695	163.1 lb	412.3 lb
8	500	450	205	550	-	760	291.0 lb	509.3 lb
10	625	500	255	600	-	810	460.8 lb	903.9 lb
12	750	550	305	650	-	895	760.6 lb	1508.0 lb
14	CF	580	410	-	850	945	906.1 lb	1695.4 lb
16	CF	630	460	-	940	995	1380.1 lb	2848.4 lb
18	CF	680	520	-	1000		1695.4 lb	CF
20	CF	730	580	-	1090		2061.3 lb	CF
24	CF	830	690	-	1100		2266.3 lb	CF

METRIC WEIGHTS

DN	A	B	C	Handwheel	Bevel Gear	Pneumatic	Manual Weight	Pneumatic Weight
25	165	210	40	311	-	455	13 kg	12 kg
50	165	240	70	340	-	485	20 kg	20 kg
65	165	255	85	356	-	500	28 kg	29 kg
80	200	270	100	370	-	525	35 kg	38 kg
100	250	285	115	386	-	560	43 kg	52 kg
125	310	340	130	446	-	630	72 kg	78 kg
150	375	400	155	500	-	695	74 kg	187 kg
200	500	450	205	550	-	760	132 kg	231 kg
250	625	500	255	600	-	810	209 kg	410 kg
300	750	550	305	650	-	895	345 kg	684 kg
350	CF	580	410	-	850	945	411 kg	769 kg
400	CF	630	460	-	940	995	626 kg	1292 kg
450	CF	680	520	-	1000		769 kg	CF
500	CF	730	580	-	1090		935 kg	CF
600	CF	830	690	-	1100		1028 kg	CF

NOTES

1 PVA sizes NPS 1 (DN25) through NPS 12 (DN300) will use the handwheel; sizes NPS 14 (DN 350) through NPS 24 (DN600) inches will use the bevel gear.

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PART NUMBERING SYSTEM - SERIES PVA

SERIES	-	SIZE	-	BASE	-	TRIM	-	OPERATOR
1		2		3		4		5

EXAMPLE

PVA0400-11041000-HWO

Series PVA, 4" (DN100), Enclosed Body, 232 psi (16 bar) Rated Sleeve, ASME 150 Drilling, DI Body, Natural Rubber Sleeve, Handwheel

1. SERIES

Code	Body Style
PVA	Bidirectional Pinch Valve

2. SIZE

Code	Size	Code	Size	Code	Size
0050	0.5" DN15	**0600**	6" DN150	**2200**	22" DN550
0100	1" DN25	**0800**	8" DN200	**2400**	24" DN600
0150	1.5" DN45	**1000**	10" DN250	**2600**	26" DN650
0200	2" DN50	**1200**	12" DN300	**2800**	28" DN700
0250	2.5" DN65	**1400**	14" DN350	**3000**	30" DN750
0300	3" DN80	**1600**	16" DN400	**3200**	32" DN800
0400	4" DN100	**1800**	18" DN450	**3400**	34" DN850
0500	5" DN125	**2000**	20" DN500	**3600**	36" DN900

2. BASE GROUP

Code	Configuration	Code	Configuration	Code	Configuration
11031	Open Body, 232 psi (16 bar), ASME 150	**11041**	Enclosed Body, 232 (16 bar), ASME 150	**11051**	Enclosed Body, 363 (16 bar), ASME 150
11032	Open Body, 232 psi (16 bar), SANS T1000	**11042**	Enclosed Body, 232 (16 bar), SANS T100	**11053**	Enclosed Body, 363 (16 bar), ASME 300
11033	Open Body, 232 psi (16 bar), ASME 300	**11043**	Enclosed Body, 232 (16 bar), ASME 300	**11057**	Enclosed Body, 363 (16 bar), SANS T2500
11034	Open Body, 232 (16 bar), AS TD	**11044**	Enclosed Body, 232 (16 bar), AS TD	**11050**	Enclosed Body, 363 (16 bar), 1092-1, PN25
11035	Open Body, 232 (16 bar), AS TE	**11045**	Enclosed Body, 232 (16 bar), AS TE		
11036	Open Body, 232 (16 bar), SANS T1600	**11046**	Enclosed Body, 232 (16 bar), SANS T1600		
11037	Open Body, 232 (16 bar), SANS T2500	**11047**	Enclosed Body, 232 (16 bar), SANS T2500		
11038	Open Body, 232 (16 bar), EN 1092-1 PN 10	**11048**	Enclosed Body, 232 (16 bar), EN 1092-1 PN 10		
11039	Open Body, 232 (16 bar), EN 1092-1 PN16	**11049**	Enclosed Body, 232 (16 bar), EN 1092-1 PN16		
11030	Open Body, 232 (16 bar), EN 1092-1, PN25	**11040**	Enclosed Body, 232 (16 bar), 1092-1, PN25		

4. TRIM

Code	Body	Sleeve	Stem*	Guide Rods	Guide Sleeve	Bolting	Min. Temp °F/°C	Max. Temp °F/°C
000	DI	Natural Rubber (NR)	AISI 420	AISI 1045	Copper Graphite	Stainless Steel	-22°/-30°	176°/80°
001	DI	Natural Rubber (NR)	304SS	AISI 1045	Copper Graphite	Stainless Steel	-22°/-30°	176°/80°
010	DI	EPDM	AISI 420	AISI 1045	Copper Graphite	Stainless Steel	-22°/-30°	212°/100°
020	DI	Viton (FKM)	AISI 420	AISI 1045	Copper Graphite	Stainless Steel	14°/-10°	194°/90°
030	DI	Nitrile (NBR)	AISI 420	AISI 1045	Copper Graphite	Stainless Steel	14°/-10°	176°/80°
040	DI	Hypalon (CSM)	AISI 420	AISI 1045	Copper Graphite	Stainless Steel	14°/-10°	194°/90°
050	DI	Chlorobutyl (CIIR)	AISI 420	AISI 1045	Copper Graphite	Stainless Steel	14°/-10°	176°/80°
100	WCB	Natural Rubber (NR)	AISI 420	AISI 1045	Copper Graphite	Stainless Steel	-22°/-30°	176°/80°
200	CF8	Natural Rubber (NR)	304SS	304SS	Copper Graphite	Stainless Steel	-22°/-30°	176°/80°
300	CF8M	Natural Rubber (NR)	316SS	316SS	Copper Graphite	Stainless Steel	-22°/-30°	176°/80°
310	CF8M	EPDM	316SS	316SS	Copper Graphite	Stainless Steel	-22°/-30°	212°/100°
320	CF8M	Viton (FKM)	316SS	316SS	Copper Graphite	Stainless Steel	14°/-10°	194°/90°
330	CF8M	Nitrile (NBR)	316SS	316SS	Copper Graphite	Stainless Steel	14°/-10°	176°/80°

*Standard stem material pneumatic and hydraulic actuation is AISI 1045 + Hard Chrome

5. PDA OPERATOR DESCRIPTORS

Code	Description	Code	Description
HWO	Handwheel	**HDA**	Hydraulic DA
BGO	Bevel Gear	**ELC**	Electric (China)
PDAZZZ	Pneumatic DA Size "ZZZ"	**BST**	Bare Stem (Threaded)
SRCZZZ	Pneumatic SR Close Size "ZZZ"	**-**	Bare Valve

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CV DATA

Valve Size		Port Size	% Of Total Travel Open									
NPS	DN	Port Size	10	20	30	40	50	60	70	80	90	100
0.5	15	Full Bore	4	7	10	12	14	16	16	16	17	17
1	25	Full Bore	10	19	27	34	39	43	45	46	46	46
1.25	32	Full Bore	16	32	45	55	64	70	74	75	75	76
1.5	40	Full Bore	25	50	70	87	100	110	115	117	117	118
2	50	Full Bore	39	78	110	135	156	172	180	182	183	185
2.5	65	Full Bore	66	131	186	228	264	290	303	308	310	313
3	80	Full Bore	100	199	281	346	400	440	460	467	470	473
4	100	Full Bore	157	311	439	541	625	687	718	729	734	740
5	125	Full Bore	245	485	687	845	977	1074	1122	1140	1147	1156
6	150	Full Bore	353	699	989	1217	1406	1546	1616	1641	1651	1664
8	200	Full Bore	627	1243	1758	2163	2500	2749	2873	2917	2935	2959
10	250	Full Bore	980	1942	2746	3380	3907	4295	4489	4558	4586	4623
12	300	Full Bore	1411	2796	3954	4867	5625	6185	6464	6564	6604	6657
14	350	Full Bore	1921	3806	5382	6624	7657	8418	8799	8935	8989	9061
16	400	Full Bore	2509	4971	7030	8652	10001	10995	11492	11670	11741	11835
18	450	Full Bore	3176	6291	8898	10950	12657	13916	14545	14769	14859	14979
20	500	Full Bore	3920	7767	10985	13518	15626	17180	17956	18234	18345	18493
24	600	Full Bore	5645	11184	15818	19466	22502	24739	25857	26257	26416	26629

NOTE

1 Cv is only dependent on the size of the Sleeve, as all PVA offerings across pressures and body types all have full-bore, unobstructed flow passages

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