PB Series
Forward-Acting Metal Rupture Disks

PB Series disk mounts into 7A - Angle Seat disk holder (refer to 7A - Angle Seat data sheet)

Features

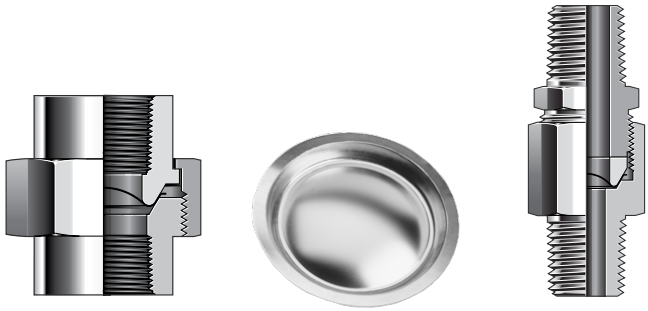
- The PB series is a forward-acting, tension-loaded design
- Operating ratios up to 75% of the low end of burst tolerance
- Excellent for liquid, gas or 2 phase flow
- Wide range of standard and exotic materials available
- Sizes from 1/4” (6mm) through 24” (600mm)
- Burst ratings from 3 psig (0.21 barg) to 60,000 psig (4136.85 barg)
- 3-dimensional stainless steel tag permanently engraved with complete disk specifications
- ASME, CE (PED), and TÜV compliance available

Options

PB-V **Vacuum Supports** are required on vacuum services. Vacuum supports are attached to the process side of the disk and allow the disk to support a full system vacuum

PB-L **Liners / Coatings** Teflon liners are available to provide protection from corrosive media if required. Coatings are also available. Refer to Table for maximum temperature ratings for disk, liner and coatings

PB-R **Protective Rings** are recommended with PB Series Disks to protect delicate materials and/or to provide stability when vacuum supports are not supplied



Contact ZOOK for Union & Screw-type options

PB Series Specifications

Minimum and Maximum Pressure Ratings - psig (barg) @ 72°F (22°C)
Protective Ring and Temperature Specifications

Disk Size	316			Inconel			Monel			Hastelloy C276			Nickel			Aluminum			MNFA in² (mm²)	
	Min.	P.R.*	Max.	Min.	P.R.*	Max.	Min.	P.R.*	Max.	Min.	P.R.*	Max.	Min.	P.R.*	Max.	Min.	P.R.*	Max.	PB PBUT	PB-V PBUT-V
1/4"	1228	▲	60000	1065	▲	60000	445	▲	30000	1228	▲	30000	495	▲	30000	180	▲	1600	0.05	-
6.35 mm	84.668	▲	4136.853	73.430	▲	4136.853	30.682	▲	2068.426	84.668	▲	2068.426	34.130	▲	2068.426	12.411	▲	110.316	32.26	-
1/2"	600	1000	6000	450	1000	6000	360	1000	6000	600	1000	6000	275	1000	6000	75	150	1500	0.17	0.13
12.70 mm	41.369	68.97	620.528	31.027	68.97	620.528	24.822	68.97	620.528	41.369	68.97	620.528	18.961	68.97	620.528	5.172	10.34	103.421	109	83.87
3/4"	400	900	6000	350	900	6000	230	700	6000	400	900	6000	220	700	6000	60	125	1000	0.44	0.35
19.05 mm	27.580	62.07	620.528	24.132	62.07	620.528	15.858	48.28	620.528	27.580	62.07	620.528	15.169	48.28	620.528	4.137	8.62	68.947	283	225
1"	300	700	6000	220	700	6000	175	500	6000	300	700	6000	135	500	6000	35	60	1000	0.71	0.51
25 mm	20.685	48.28	620.528	15.169	48.28	620.528	12.066	300.00	620.528	20.685	48.28	620.528	9.308	34.48	620.528	2.414	4.14	68.947	458	329
1-1/2"	200	500	6000	140	500	6000	115	300	6000	200	500	6000	90	300	6000	23	40	800	1.54	1.05
40 mm	13.790	34.48	413.685	9.653	34.48	413.685	7.929	20.69	413.685	13.790	34.48	413.685	6.206	20.69	413.685	1.586	2.76	55.158	993	677
2"	110	350	6000	95	300	6000	65	300	4000	110	350	6000	60	300	4000	15	35	600	3.36	3.19
50 mm	7.585	24.14	413.685	6.551	20.69	413.685	4.482	20.69	275.790	7.585	24.14	413.685	4.137	20.69	275.790	1.035	2.41	41.368	2167	2058
3"	90	300	3600	75	250	3600	50	250	3000	90	300	3600	40	200	3000	10	30	500	7.39	7.02
80 mm	6.206	20.69	248.211	5.172	17.24	248.211	3.448	17.24	206.842	6.206	20.69	248.211	2.758	13.79	206.842	0.690	2.07	34.473	4767	4529
4"	60	250	3600	55	250	3000	40	175	2000	60	250	3600	30	140	2000	8	40	390	12.73	12.18
100 mm	4.137	17.24	248.211	3.793	17.24	206.842	2.758	12.07	137.895	4.137	17.24	248.211	2.069	9.66	137.895	0.552	2.76	26.889	8212	7858
6"	50	200	3500	40	200	2500	30	175	1500	50	200	3500	25	100	1500	7	40	290	28.27	21.76
150 mm	3.448	13.79	241.316	2.758	13.79	172.368	2.069	12.07	103.421	3.448	13.79	241.316	1.724	6.90	103.421	0.483	2.76	19.994	18238	14038
8"	40	210	1500	30	200	1500	25	100	1200	40	210	1500	18	100	1200	6	30	225	50.01	35.92
200 mm	2.758	14.48	103.421	2.069	13.79	103.421	1.724	6.90	82.737	2.758	14.48	103.421	1.242	6.90	82.737	0.414	2.07	15.513	32264	23174
10"	30	170	750	25	170	750	20	125	750	30	170	750	16	125	750	6	25	175	78.54	57.96
250 mm	2.069	11.72	51.710	1.724	11.72	51.710	1.379	8.62	51.710	2.069	11.72	51.710	1.104	8.62	51.710	0.414	1.72	12.065	50670	37393
12"	25	180	700	22	180	750	18	125	700	25	180	700	14	80	700	5	25	150	113.10	85.54
300 mm	1.724	12.41	48.263	1.517	12.41	51.710	1.242	8.62	48.263	1.724	12.41	48.263	0.966	5.52	48.263	0.345	1.72	10.342	72967	55186
Max. Temp.	900°F (482°C)			900°F (482°C)**			800°F (427°C)			900°F (482°C)			750°F (399°C)			250°F (121°C)				

Notes: ▲ Not Available

* Protective Ring - Process side protective ring is required when specified burst pressure is at or below the value shown in this column

** Contact ZOOK for higher temperatures

- Other materials and sizes are available upon request
- For sizes, burst ratings and temperatures not shown, contact ZOOK
- Maximum temperature for lined PB-L with Teflon material liner: 500°F (260°C)
- Not all pressures are achievable with PB Series Disks. If Manufacturing tests do not yield desired results, consideration must be given to alternate materials, alternate disk designs, or a broader manufacturing design range

Table Tolerance

Table Tolerance - ZOOK and ASME									Table Tolerance - PED				
Burst Pressure Range (psig)		ZOOK and ASME Manufacturing Design Range (psig)						Burst Tolerance	Burst Pressure Range (barg)		Total Performance Tolerance		
		Standard		Reduced Tolerance							Standard	Reduced Tolerance	
				Half		Quarter							
Minimum	Maximum	Minus	Plus	Minus	Plus	Minus	Plus		Minimum	Maximum		Good	Better
Min	<1.0	0	0.3	0.00	0.15	0.00	0.08	± 0.25 psig	Min	<0.069	±75%	±73%	±70%
1.0	<2.5	0.5	0.5	0.25	0.25	0.13	0.13	± 0.33 psig	0.069	<0.172	±65%	±45%	±35%
2.5	<4.0	1	1	0.50	0.50	0.25	0.25	± 0.5 psig	0.172	<0.276	±50%	±30%	±20%
4.0	<7.0	1	2	0.50	1.00	0.25	0.50	± 0.5 psig	0.276	<0.483	±50%	±30%	±20%
7.0	<11.0	1.5	2.5	0.75	1.25	0.38	0.63	± 0.8 psig	0.483	<0.759	±50%	±30%	±20%
11.0	<15.0	2	3	1.00	1.50	0.50	0.75	± 1.3 psig	0.759	<1.034	±25%	±20%	±15%
15.0	<17	2	3	1.00	1.50	0.50	0.75	± 2.0 psig	1.034	<1.172	±25%	±20%	±15%
17	<26	2	4	1.00	2.00	0.50	1.00	± 2.0 psig	1.172	<1.793	±25%	±20%	±15%
26	<40	3	5	1.50	2.50	0.75	1.25	± 2.0 psig	1.793	<2.758	±20%	±15%	±10%
40	<66	4	6	2.00	3.00	1.00	1.50	± 5%	2.758	<4.552	±15%	±10%	±7.5%
66	<101	5	9	2.50	4.50	1.25	2.25	± 5%	4.552	<6.966	±15%	±10%	±7.5%
101	<151	6	12	3.00	6.00	1.50	3.00	± 5%	6.966	<10.412	±10%	±7.5%	±6.5%
151	<201	9	16	4.50	8.00	2.25	4.00	± 5%	10.412	<13.859	±10%	±7.5%	±6.5%
201	<351	12	23	6.00	11.50	3.00	5.75	± 5%	13.859	<24.201	±10%	±7.5%	±6.5%
351	<500	15	30	7.50	15.00	3.75	7.50	± 5%	24.201	<34.474	±10%	±7.5%	±6.5%
500	Max	3%	6%	1.5%	3.0%	0.75%	1.5%	± 5%	34.474	Max	±10%	±7.5%	±6.5%

Certified Flow Resistance Factors

Disk Type	Krgl
PB	0.92
PB-V	5.46

Teflon - Trademark of The Chemours Company
Inconel - Trademark of Special Metals Corporation
Monel - Trademark of Special Metals Corporation
Hastelloy - Trademark of Haynes International

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