

Piston Seal BP Profile

Catalog EPS 5370/USA



BP Profile, Premium TPU Cap Seal

Parker's BP profile is a squeeze type, bi-directional piston seal for use in medium to heavy duty hydraulic applications. This seal is primarily designed for linear applications but has been successfully used as a low speed rotary seal. The standard material for this profile is Resilon® 4304 polyurethane, compound P4304. This is a proprietary Parker polyurethane offering higher wear resistance, extrusion resistance, and extended temperature range. The Resilon® 4304 cap is energized using a resilient nitrile elastomer offering low compression set. The BP seal's geometry provides a fluid reservoir between the two sealing lips which holds system fluid, resulting in reduced breakaway and running friction. The BP is offered in two styles, standard and narrow, with the standard style designed to retrofit O-ring grooves. The BP profile is easy to install and will resist rolling and twisting in long stroke applications.

The BP profile is sold only as an assembly (seal and energizer). See part number nomenclature.

Technical Data

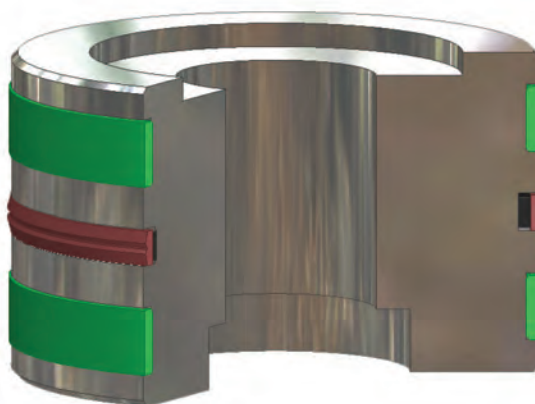
Standard Materials*	Temperature Range	Pressure Range†	Surface Speed
Cap P4304D60	-65°F to 275°F (-54°C to 135°C)	7,000 psi (482 bar)	< 1.6 ft/s (0.5 m/sec)
Energizer A 70A Nitrile	-30°F to 250°F (-34°C to 121°C)		

***Alternate Materials:** For applications that may require an alternate material, please contact your local Parker Seal representative.

†**Pressure Range** without wear rings (see Table 2-4, page 2-5).



BP Cross-Section



BP installed in Piston Gland

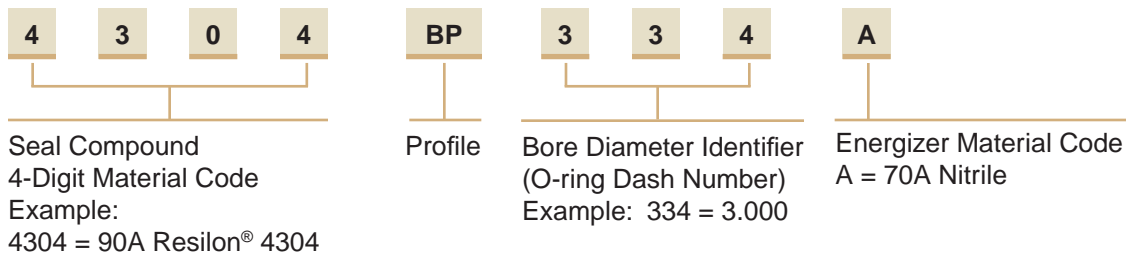
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BP Profile

Part Number Nomenclature — BP (Standard Style) Profile

Table 7-2. BP (Standard Style) Profile — Inch



Gland Dimensions — BP Profile

Please refer to Engineering Section 2,
Page 2-8 for surface finish and additional
hardware considerations.

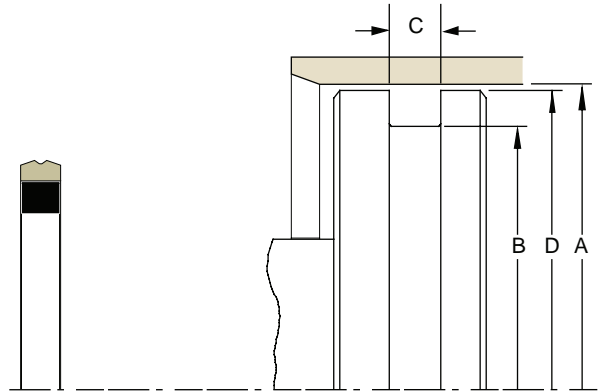


Table 7-3. BP Gland Dimensions (Standard Size)

A Bore Diameter	B Groove Diameter	C Groove Width	D Piston Diameter*	Part Number
+0.002/ -0.000	+0.000/ -0.002	+0.005/ -0.000	+0.000/ -0.001	
0.562	0.320	0.187	0.559	4304BP203A
0.625	0.383	0.187	0.662	4304BP204A
0.687	0.445	0.187	0.684	4304BP205A
0.750	0.508	0.187	0.747	4304BP206A
0.812	0.570	0.187	0.809	4304BP207A
0.875	0.633	0.187	0.872	4304BP208A
0.937	0.695	0.187	0.934	4304BP209A
1.000	0.758	0.187	0.997	4304BP210A
1.062	0.820	0.187	1.059	4304BP211A
1.125	0.833	0.187	1.122	4304BP212A
1.187	0.945	0.187	1.184	4304BP213A
1.250	1.008	0.187	1.247	4304BP214A
1.312	1.070	0.187	1.309	4304BP215A
1.375	1.133	0.187	1.372	4304BP216A
1.437	1.195	0.187	1.434	4304BP217A
1.500	1.258	0.187	1.497	4304BP218A
1.562	1.320	0.187	1.559	4304BP219A
1.625	1.383	0.187	1.622	4304BP220A
1.687	1.445	0.187	1.684	4304BP221A
1.750	1.508	0.187	1.747	4304BP222A
1.875	1.505	0.281	1.872	4304BP325A
2.000	1.630	0.281	1.997	4304BP326A
2.125	1.755	0.281	2.122	4304BP327A
2.250	1.880	0.281	2.247	4304BP328A

*If used with wear rings, refer to wear ring piston diameter, see Section 9.

A Bore Diameter	B Groove Diameter	C Groove Width	D Piston Diameter*	Part Number
+0.002/ -0.000	+0.000/ -0.002	+0.005/ -0.000	+0.000/ -0.001	
2.375	2.005	0.281	2.372	4304BP329A
2.500	2.130	0.281	2.497	4304BP330A
2.625	2.255	0.281	2.622	4304BP331A
2.750	2.380	0.281	2.747	4304BP332A
2.875	2.505	0.281	2.872	4304BP333A
3.000	2.630	0.281	2.997	4304BP334A
3.125	2.755	0.281	3.122	4304BP335A
3.250	2.880	0.281	3.247	4304BP336A
3.375	3.005	0.281	3.372	4304BP337A
3.500	3.130	0.281	3.497	4304BP338A
3.625	3.255	0.281	3.622	4304BP339A
3.750	3.380	0.281	3.747	4304BP340A
3.875	3.505	0.281	3.872	4304BP341A
4.000	3.630	0.281	3.997	4304BP342A
4.125	3.755	0.281	4.122	4304BP343A
4.250	3.880	0.281	4.247	4304BP344A
4.375	4.005	0.281	4.372	4304BP345A
4.500	4.130	0.281	4.497	4304BP346A
4.625	4.255	0.281	4.622	4304BP347A
4.750	4.380	0.281	4.747	4304BP348A
4.875	4.505	0.281	4.872	4304BP349A
5.002	4.630	0.281	4.997	4304BP350A
5.127	4.653	0.375	5.123	4304BP426A
5.252	4.778	0.375	5.248	4304BP427A

*If used with wear rings, refer to wear ring piston diameter, see Section 9.

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Table 7-3. BP Gland Dimensions — Inch (Continued)

A Bore Diameter	B Groove Diameter	C Groove Width	D Piston Diameter*	Part Number
+0.002/ -0.000	+0.000/ -0.002	+0.005/ -0.000	+0.000/ -0.001	
5.377	4.903	0.375	5.373	4304BP428A
5.502	5.028	0.375	5.498	4304BP429A
5.627	5.153	0.375	5.623	4304BP430A
5.752	5.278	0.375	5.748	4304BP431A
5.877	5.403	0.375	5.873	4304BP432A
6.002	5.528	0.375	5.998	4304BP433A

A Bore Diameter	B Groove Diameter	C Groove Width	D Piston Diameter*	Part Number
+0.002/ -0.000	+0.000/ -0.002	+0.005/ -0.000	+0.000/ -0.001	
6.127	5.653	0.375	6.123	4304BP434A
6.252	5.778	0.375	6.248	4304BP435A
6.502	6.028	0.375	6.498	4304BP437A
6.752	6.278	0.375	6.748	4304BP438A
7.002	6.528	0.375	6.998	4304BP439A

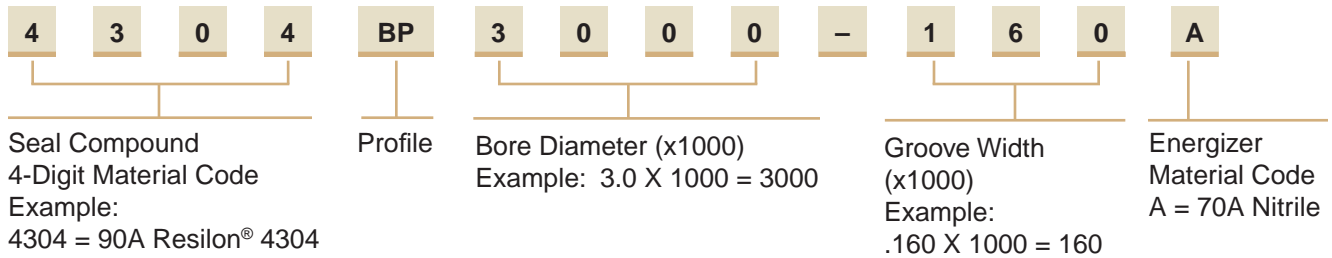
*If used with wear rings, refer to wear ring piston diameter, see Section 9.

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NOTE: For sizes larger than those shown in the table, please contact your local Parker Seal representative.

Part Number Nomenclature — BP (Narrow Style) Profile

Table 7-4. BP (Narrow Style) Profile — Inch



Gland Dimensions — BP Profile

Please refer to Engineering Section 2, Page 2-8 for surface finish and additional hardware considerations.

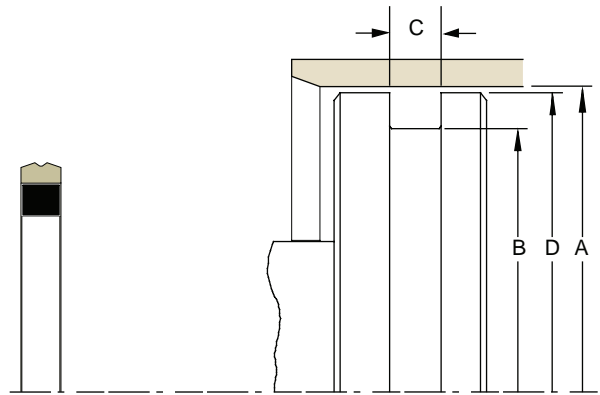


Table 7-5. BP Gland Dimensions (Narrow Size)

A Bore Diameter	B Groove Diameter	C Groove Width	D Piston Diameter*	Part Number
+0.002/ -0.000	+0.000/ -0.002	+0.002/ -0.000	+0.000/ -0.001	
1.750	1.473	0.130	1.747	4304BP1750-130A
2.000	1.582	0.175	1.997	4304BP2000-175A
2.250	1.973	0.130	2.247	4304BP2250-130A
2.500	2.223	0.130	2.497	4304BP2500-130A
2.500	2.082	0.175	2.497	4304BP2500-175A
2.750	2.348	0.160	2.747	4304BP2750-160A
3.000	2.598	0.160	2.997	4304BP3000-160A

A Bore Diameter	B Groove Diameter	C Groove Width	D Piston Diameter*	Part Number
+0.002/ -0.000	+0.000/ -0.002	+0.002/ -0.000	+0.000/ -0.001	
3.250	2.848	0.160	3.247	4304BP3250-160A
3.500	3.098	0.160	3.497	4304BP3500-160A
3.750	3.348	0.160	3.747	4304BP3750-160A
4.000	3.598	0.160	3.997	4304BP4000-160A
4.250	3.848	0.160	4.247	4304BP4250-160A
4.500	4.098	0.160	4.497	4304BP4500-160A
5.000	4.598	0.160	4.997	4304BP5000-160A

*If used with wear rings, refer to wear ring piston diameter, see Section 9.

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