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## Back-up Rings

Back-up rings are the most common anti-extrusion devices in dynamic sealing. They provide simple solutions to safely increase system pressure or solve an existing seal extrusion problem. Back-up rings function by positioning a more robust material adjacent to the extrusion gap, taking the seal's place and providing a barrier against high pressures. Back-ups can be used to offset the reduced pressure rating effects of wear rings or to improve seal life at increased pressures. They can also be used to protect seals against pressure spikes, or to ensure seal performance at higher temperatures.

Parker offers a wide range of back-up ring profiles and materials to complement each seal type and to suit every application. Modular back-up rings disperse pressure from the seal throughout the gland to fill the extrusion gap and protect the seal (see Figure 10-1). The use of Profile MB can increase a PolyPak's pressure rating to 10,000 psi, while 8700 back-ups provide added extrusion resistance to u-cups with only a minimal increase in gland width.

Positively-actuated back-ups are actuated both axially and radially into the extrusion gap, guarding the seal against extrusion (see Figure 10-2). For many profiles, positively-actuated back-ups can provide the ultimate extrusion resistance while retaining the seal's original gland dimensions.

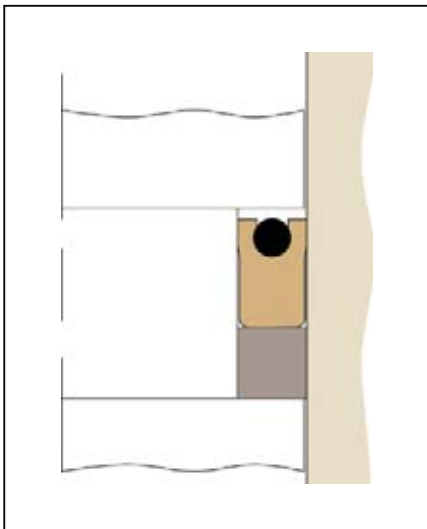


Figure 10-1. Modular Back-up Ring

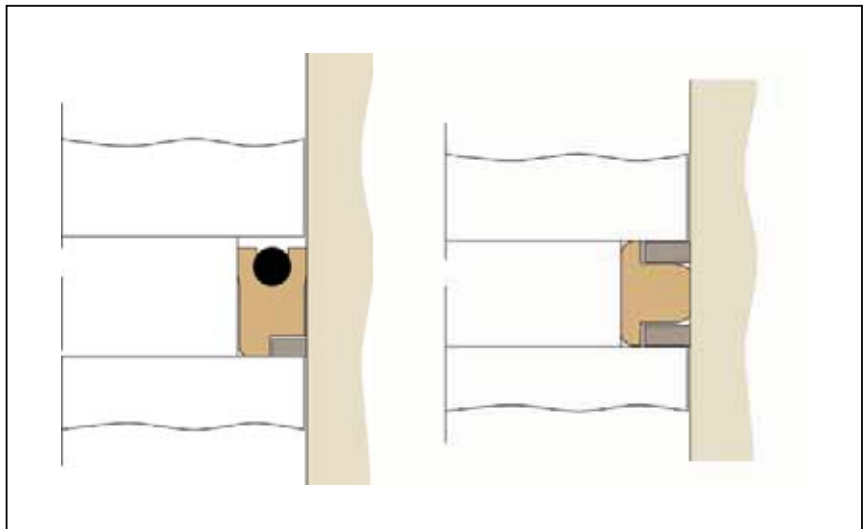
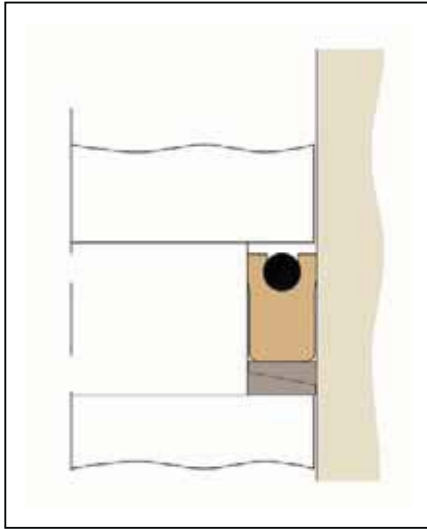


Figure 10-2. Positively-Actuated Back-up

**Back-up Rings Introduction (Continued)**

For extreme pressures, Parker can design custom back-up ring systems utilizing metal or engineered plastics technology and highly advanced geometries. In Figure 10-3 (angled back-ups), a single modular back-up is replaced with dual wedge-shaped back-ups, composed of UltraCOMP or bronze. As pressure increases, the angled back-ups are forced to bridge the clearance gap, eliminating extrusion. This method has been used successfully at pressures as high as 100,000 psi. Please contact Parker or your authorized distributor for engineering assistance in designing custom back-up configurations.



*Figure 10-3. Angled Back-up*








**When to Use Back-up Rings**

- System operating pressure exceeds the limitations of the seal's extrusion resistance.
- Pressure spikes in the system exceed normal operating conditions, risking damage to the seal.
- The use of wear rings has increased the extrusion gap, reducing the seal's pressure rating to an unacceptable level.
- The system temperature is high enough to lower the seal's extrusion resistance to an unacceptable level.





# Back-up Rings Product Offering

## Profiles

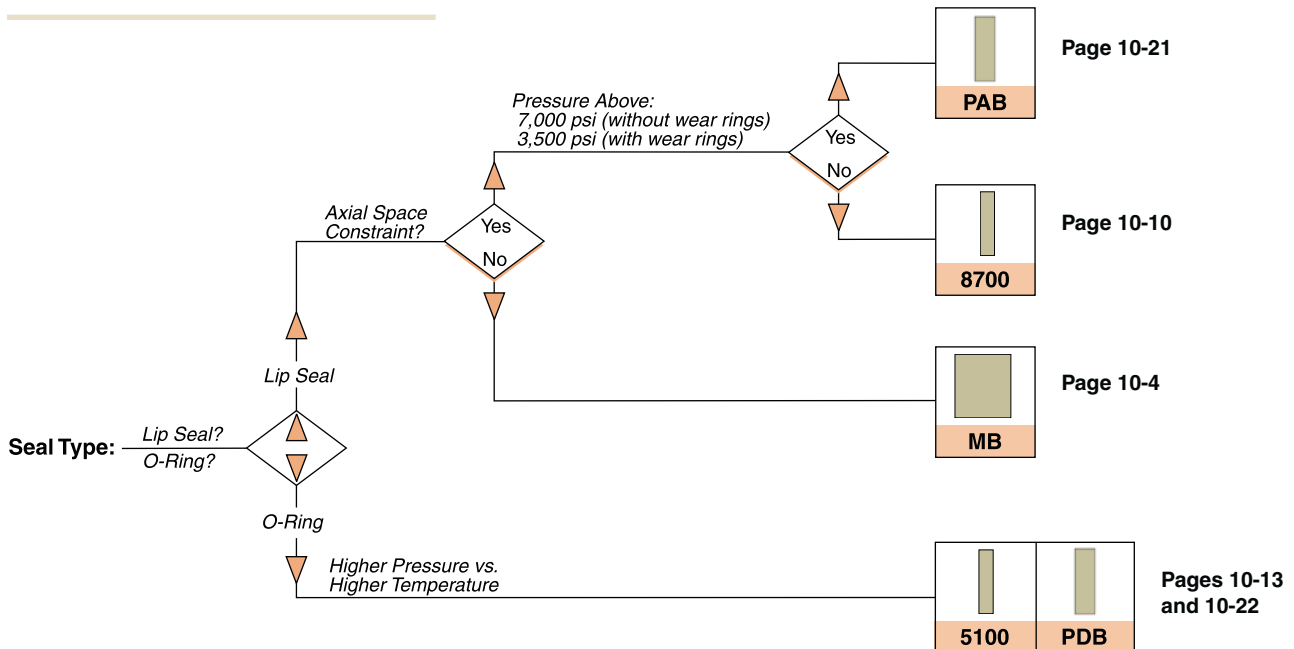
Table 10-1: Product Profiles

Series	Description	Application (Duty)				Page
		Light	Medium	Heavy	Pneumatic	
MB	Modular Back-up for PolyPaks & U-cups					10-4
8700	Low Profile Back-up for PolyPaks & U-cups					10-10
5100	O-ring Groove Back-up					10-13

Series	Description	Application (Duty)				Page
		Light	Medium	Heavy	Pneumatic	
PAB	Positively-Activated Back-up					10-21
PDB	PTFE Back-up					10-22

# Back-up Rings Decision Tree



# Back-up Ring MB Profile

Catalog EPS 5370/USA



## MB Profile, Modular Back-up for PolyPaks and U-cups

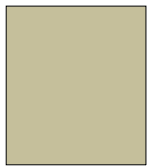
Modular back-ups, MB profile, are specifically designed to compliment the PolyPak profiles. To help make the selection and ordering of the correct part number for the MB profile easy and efficient, the part numbering system used is very similar to that of the PolyPak. By formulating high modulus blends of Molythane (4617) and PolyMyte (4652), Parker has ensured that MB back-ups can be used with either type of base sealing material while maintaining the expected temperature range and fluid compatibility. The robust design ensures pressure ratings up to 10,000 psi are met.

### Technical Data

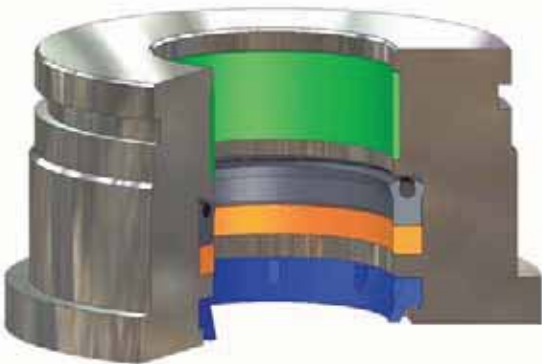
Standard Materials*	Temperature	Max. Pressure Range**
P4617D65	-65°F to 250°F (-54°C to 121°C)	10,000 psi (689 bar)
Z4652D65	-65°F to 275°F (-54°C to 135°C)	10,000 psi (689 bar)

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

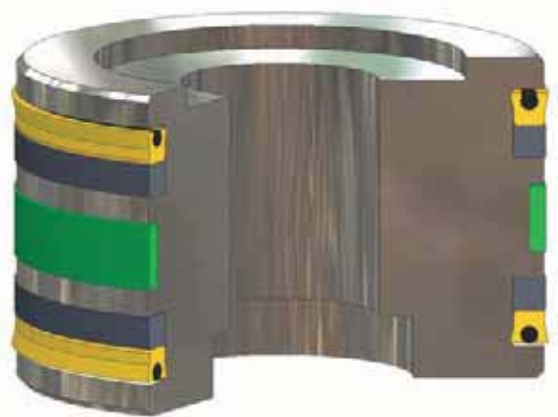
**\*\*** 7,000 psi (482 bar) with tight-tolerance wear rings.  
5,000 psi (344 bar) with standard-tolerance wear rings.



*MB Cross-Section*



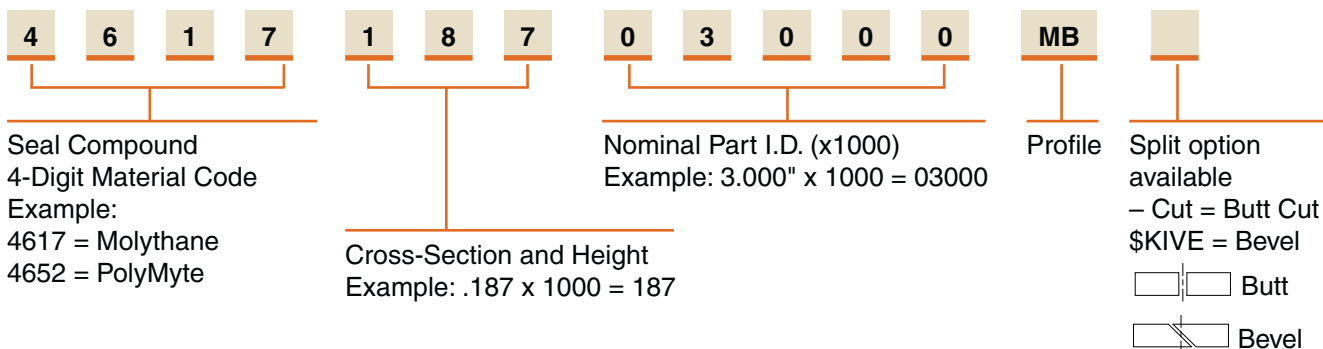
*MB installed in Rod Gland*



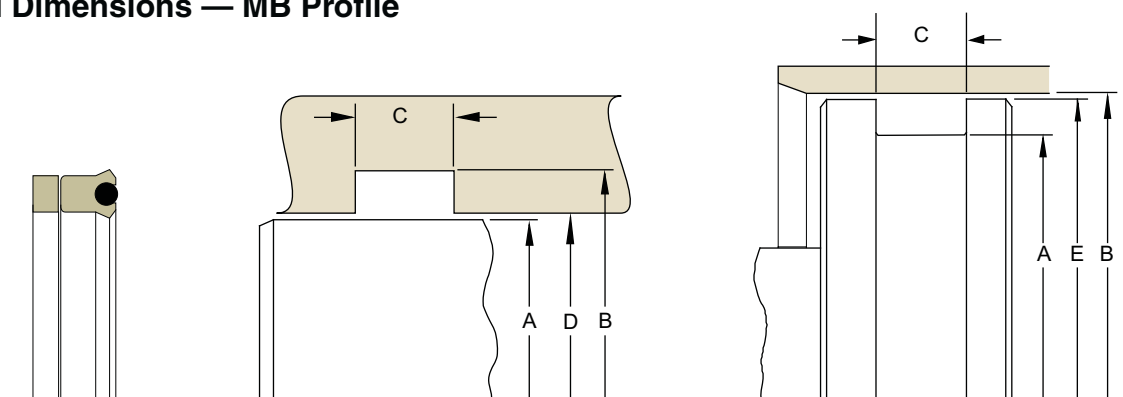
*MB installed in Piston Gland*

**Part Number Nomenclature — MB Profile**

**Table 10-2. MB Profile — Inch**



**Gland Dimensions — MB Profile**



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

**How to Determine the Gland Width when Using Modular Back-up Rings**

The Modular Back-up ring allows you to extend the pressure rating of a seal that fits into the common gland used by such seals as the PolyPaks and the BS, BT, BD, B3, B7, UP, UR and US Profiles. In order to use the MB Back-up ring the width of the seal gland must be extended to account for the height of the Modular Back-up ring. Add the following width to the gland of the seal only as shown in this catalog.

**Table 10-3. Added Gland Width Values**

Seal Cross Section	Added Gland Width
1/8	0.138
3/16	0.206
1/4	0.275
5/16	0.343
3/8	0.413
7/16	0.481
1/2	0.550
5/8	0.688
3/4	0.825
1	1.100

**For non-standard cross sections** the added gland width can be determined by multiplying the cross section by (1.1). The tolerance on the extended gland remains the same as it is for the seal gland width, which is usually +.015.

**Table 10-4. MB Gland Dimensions — Inch (All dimensions are reference)**

A	B	C	D	E	Material		Part Number
Rod Diameter	(Rod) Groove Diameter	(Rod) Groove Width	Throat Diameter*		4617	4652	
(Piston) Groove Diameter	Bore Diameter	Groove Width		Piston Diameter**			
0.125	0.375	Add to gland width the corresponding value from Table 10-3.	0.126	0.374	X	X	xxxx12500125MB
0.250	0.500		0.251	0.499	X	X	xxxx12500250MB
0.312	0.562		0.313	0.561	X		xxxx12500312MB
0.375	0.625		0.376	0.624	X	X	xxxx12500375MB
0.500	0.750		0.501	0.749	X	X	xxxx12500500MB
0.500	0.875		0.501	0.874	X		xxxx18700500MB
0.500	1.000		0.501	0.999	X	X	xxxx25000500MB
0.625	0.875		0.626	0.874	X	X	xxxx12500625MB
0.625	1.000		0.626	0.999	X	X	xxxx18700625MB
0.625	1.125		0.626	1.124	X		xxxx25000625MB
0.625	1.375		0.627	1.373		X	xxxx37501000MB
0.687	0.937		0.688	0.936	X		xxxx12500687MB
0.750	1.000		0.751	0.999	X	X	xxxx12500750MB
0.750	1.250		0.751	1.249	X	X	xxxx25000750MB
0.875	1.375		0.876	1.374	X		xxxx25000875MB
0.937	1.187		0.938	1.186	X		xxxx12500937MB
1.000	1.250		1.001	1.249	X	X	xxxx12501000MB
1.000	1.375		1.001	1.374	X		xxxx18701000MB
1.000	1.500		1.001	1.499	X	X	xxxx25001000MB
1.125	1.500		1.126	1.499			xxxx18701125MB
1.250	1.500		1.251	1.499	X	X	xxxx12501250MB
1.250	1.625		1.251	1.624	X	X	xxxx18701250MB
1.250	1.750		1.251	1.749	X	X	xxxx25001250MB
1.250	1.875		1.252	1.873	X	X	xxxx31201250MB
1.250	2.000		1.252	1.998	X		xxxx37501250MB
1.312	1.812		1.313	1.811	X		xxxx25001312MB
1.375	1.625		1.376	1.624	X		xxxx12501375MB
1.375	1.750		1.376	1.749	X	X	xxxx18701375MB
1.375	1.875		1.376	1.874	X	X	xxxx25001375MB
1.375	2.000		1.377	1.998	X		xxxx31201375MB
1.500	1.750		1.501	1.749	X		xxxx12501500MB
1.500	1.875		1.501	1.874	X	X	xxxx18701500MB
1.500	2.000		1.501	1.999	X		xxxx25001500MB
1.500	2.125		1.502	2.123	X		xxxx31201500MB
1.500	2.250		1.502	2.248	X	X	xxxx37501500MB
1.625	2.000		1.626	1.999	X	X	xxxx18701625MB
1.625	2.250		1.627	2.248	X		xxxx31201625MB
1.625	2.375		1.627	2.373	X	X	xxxx37501625MB
1.750	2.250		1.751	2.249	X	X	xxxx25001750MB
1.750	2.375		1.752	2.373	X	X	xxxx31201750MB
1.750	2.500	1.752	2.498	X		xxxx37501750MB	
1.875	2.250	1.876	2.249	X	X	xxxx18701875MB	
1.875	2.500	1.877	2.498	X		xxxx31201875MB	
1.875	2.625	1.877	2.623	X	X	xxxx37501875MB	
2.000	2.500	2.001	2.499	X	X	xxxx25002000MB	
2.000	2.625	2.002	2.623	X		xxxx31202000MB	

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

Table 10-4. MB Gland Dimensions — Inch (Continued) (All dimensions are reference)

A Rod Diameter	B (Rod) Groove Diameter	C (Rod) Groove Width	D Throat Diameter*	E Piston Diameter**	Material		Part Number
					4617	4652	
(Piston) Groove Diameter	Bore Diameter	Groove Width					
2.000	2.750	Add to gland width the corresponding value from Table 10-3.	2.002	2.748	X	X	xxxx37502000MB
2.000	3.000		2.002	2.998	X		xxxx50002000MB
2.125	2.500		2.126	2.499	X	X	xxxx18702125MB
2.250	2.750		2.251	2.749	X	X	xxxx25002250MB
2.250	2.875		2.252	2.873	X		xxxx31202250MB
2.250	3.000		2.252	2.998	X		xxxx37502250MB
2.250	3.250		2.252	3.248	X		xxxx50002250MB
2.375	3.000		2.377	2.998	X		xxxx31202375MB
2.375	3.125		2.377	3.123	X		xxxx37502375MB
2.500	2.875		2.501	2.874	X		xxxx18702500MB
2.500	3.000		2.501	2.999	X	X	xxxx25002500MB
2.500	3.125		2.502	3.123	X		xxxx31202500MB
2.500	3.250		2.502	3.248	X		xxxx37502500MB
2.500	3.500		2.502	3.498	X		xxxx50002500MB
2.500	3.750		2.503	3.747	X		xxxx62502500MB
2.625	3.000		2.626	2.999	X		xxxx18702625MB
2.625	3.125		2.626	3.124	X		xxxx25002625MB
2.625	3.375		2.627	3.373	X		xxxx37502625MB
2.750	3.125		2.751	3.124	X		xxxx18702750MB
2.750	3.250		2.751	3.249	X	X	xxxx25002750MB
2.750	3.500		2.752	3.498	X	X	xxxx37502750MB
2.750	4.000		2.753	3.997	X		xxxx62502750MB
2.875	3.375		2.876	3.374	X		xxxx25002875MB
3.000	3.375		3.001	3.374	X	X	xxxx18703000MB
3.000	3.500		3.001	3.499	X	X	xxxx25003000MB
3.000	3.625		3.002	3.623	X		xxxx31203000MB
3.000	3.750		3.002	3.748	X	X	xxxx37503000MB
3.000	4.000		3.002	3.998	X		xxxx50003000MB
3.000	4.250		3.003	4.247	X		xxxx62503000MB
3.125	3.500		3.126	3.499	X	X	xxxx18703125MB
3.125	3.625		3.126	3.624		X	xxxx25003125MB
3.125	3.875		3.127	3.873	X		xxxx37503125MB
3.250	3.625		3.251	3.624	X		xxxx18703250MB
3.250	3.750		3.251	3.749	X	X	xxxx25003250MB
3.250	4.000		3.252	3.998	X		xxxx37503250MB
3.250	4.500		3.253	4.497	X		xxxx62503250MB
3.375	4.125		3.377	4.123	X		xxxx37503375MB
3.500	3.875		3.501	3.874	X	X	xxxx18703500MB
3.500	4.000		3.501	3.999	X	X	xxxx25003500MB
3.500	4.125		3.502	4.123	X	X	xxxx31203500MB
3.500	4.250	3.502	4.248	X	X	xxxx37503500MB	
3.500	4.500	3.502	4.498	X		xxxx50003500MB	
3.625	4.000	3.626	3.999	X	X	xxxx18703625MB	
3.750	4.250	3.751	4.249	X	X	xxxx25003750MB	
3.750	4.375	3.752	4.373	X		xxxx31203750MB	
3.750	4.500	3.752	4.498	X	X	xxxx37503750MB	

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

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

**Table 10-4. MB Gland Dimensions — Inch (Continued) (All dimensions are reference)**

A	B	C	D	E	Material		Part Number
Rod Diameter	(Rod) Groove Diameter	(Rod) Groove Width	Throat Diameter*		4617	4652	
(Piston) Groove Diameter	Bore Diameter	Groove Width		Piston Diameter**			
4.000	4.375	Add to gland width the corresponding value from Table 10-3.	4.001	4.374		X	xxxx18704000MB
4.000	4.500		4.001	4.499	X	X	xxxx25004000MB
4.000	4.750		4.002	4.748	X		xxxx37504000MB
4.000	5.000		4.002	4.998	X		xxxx50004000MB
4.250	4.750		4.251	4.749	X		xxxx25004250MB
4.250	5.000		4.252	4.998	X	X	xxxx37504250MB
4.375	4.750		4.376	4.749	X		xxxx18704375MB
4.375	5.000		4.377	4.998	X		xxxx31204375MB
4.375	5.125		4.377	5.123	X		xxxx37504375MB
4.500	5.000		4.501	4.999	X	X	xxxx25004500MB
4.500	5.125		4.502	5.123	X	X	xxxx31204500MB
4.500	5.500		4.502	5.498	X		xxxx50004500MB
4.750	5.500		4.752	5.498	X	X	xxxx37504750MB
4.875	5.625		4.877	5.623	X		xxxx37504875MB
5.000	5.500		5.001	5.499	X	X	xxxx25005000MB
5.000	5.750		5.002	5.748	X	X	xxxx37505000MB
5.000	6.000		5.002	5.998	X	X	xxxx50005000MB
5.250	5.750		5.251	5.749	X		xxxx25005250MB
5.250	6.000		5.252	5.998	X	X	xxxx37505250MB
5.250	6.250		5.252	6.248	X	X	xxxx50005250MB
5.375	6.000		5.377	5.998	X		xxxx31205375MB
5.375	6.125		5.377	6.123	X		xxxx37505375MB
5.500	6.000		5.501	5.999	X	X	xxxx25005500MB
5.500	6.250		5.502	6.248	X	X	xxxx37505500MB
5.500	6.500		5.502	6.498	X	X	xxxx50005500MB
5.750	6.250		5.751	6.249		X	xxxx25005750MB
5.875	6.625		5.877	6.623	X	X	xxxx37505875MB
6.000	6.500		6.001	6.499	X	X	xxxx25006000MB
6.000	6.750		6.002	6.748	X	X	xxxx37506000MB
6.000	7.000		6.002	6.998	X		xxxx50006000MB
6.250	7.000		6.252	6.998	X	X	xxxx37506250MB
6.500	7.250		6.502	7.248	X	X	xxxx37506500MB
6.500	7.500		6.502	7.498	X	X	xxxx50006500MB
6.500	8.000		6.503	7.997	X		xxxx75006500MB
6.750	7.750		6.752	7.748	X		xxxx50006750MB
7.000	7.750		7.002	7.748	X	X	xxxx37507000MB
7.000	8.000		7.002	7.998	X	X	xxxx50007000MB
7.000	8.250		7.003	8.247	X		xxxx62507000MB
7.250	8.000		7.252	7.998	X	X	xxxx37507250MB
7.500	8.000		7.501	7.999	X	X	xxxx25007500MB
7.500	8.250	7.502	8.248	X		xxxx37507500MB	
7.500	9.000	7.503	8.997	X		xxxx75007500MB	
7.750	8.250	7.751	8.249	X		xxxx25007750MB	
7.750	8.500	7.752	8.498	X		xxxx37507750MB	
8.000	8.625	8.002	8.623	X		xxxx31208000MB	
8.000	9.000	8.002	8.998	X		xxxx50008000MB	

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



Table 10-4. MB Gland Dimensions — Inch (Continued) (All dimensions are reference)

A	B	C	D	E	Material		Part Number
Rod Diameter	(Rod) Groove Diameter	(Rod) Groove Width	Throat Diameter*		4617	4652	
(Piston) Groove Diameter	Bore Diameter	Groove Width		Piston Diameter**			
8.500	9.500	Add to gland width the corresponding value from Table 10-3.	8.502	9.498	X	X	xxxx50008500MB
9.000	9.750		9.002	9.748	X	X	xxxx37509000MB
9.000	10.000		9.002	9.998	X	X	xxxx50009000MB
9.250	10.000		9.252	9.998	X	X	xxxx37509250MB
9.500	10.500		9.502	10.498	X		xxxx50009500MB
9.750	10.500		9.752	10.498	X		xxxx37509750MB
9.875	10.875		9.877	10.873	X		xxxx50009875MB
10.000	10.500		10.001	10.499	X		xxxx25010000MB
10.000	10.750		10.002	10.748	X		xxxx37510000MB
10.000	11.000		10.002	10.998	X		xxxx50010000MB
10.500	11.250		10.502	11.248	X		xxxx37510500MB
10.500	11.500		10.502	11.498	X	X	xxxx50010500MB
11.000	11.750		11.002	11.748	X		xxxx37511000MB
11.000	12.000		11.002	11.998		X	xxxx50011000MB
11.250	12.000		11.252	11.998	X		xxxx37511250MB
11.500	12.500		11.502	12.498	X	X	xxxx50011500MB
12.000	13.000		12.002	12.998	X	X	xxxx50012000MB
12.750	14.000		12.753	13.997	X		xxxx62512750MB
13.000	13.500		13.001	13.499	X	X	xxxx25011750MB
13.500	14.500		13.502	14.498	X	X	xxxx50013500MB
14.000	14.500		14.001	14.499		X	xxxx25012000MB
15.000	16.000		15.002	15.998	X	X	xxxx50015000MB
17.000	18.000		17.002	17.998	X		xxxx50017000MB
17.750	19.000		17.753	18.997		X	xxxx62517750MB
19.000	20.000		19.002	19.998	X		xxxx50019000MB
21.000	22.000		21.002	21.998	X	X	xxxx50021000MB
29.000	30.000		29.002	29.998	X		xxxx50029000MB

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

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

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

# Back-up Ring 8700 Profile

Catalog EPS 5370/USA



## 8700 Profile, Low Profile Modular Back-up for PolyPaks and U-cups

8700 back-ups provide added extrusion resistance to u-cups and PolyPaks with only minimal increase in gland width. This profile of back-ups was originally designed to dramatically increase the pressure rating of rubber u-cups in situations where temperature or fluid compatibility prevent the use of urethane seals. As such, 8700 back-ups share a part numbering system very similar to many of our rubber u-cup profiles for easy matching of components. Additionally, they are perfect for adding heavy duty pressure capabilities to medium duty urethane sealing systems.

### Technical Data

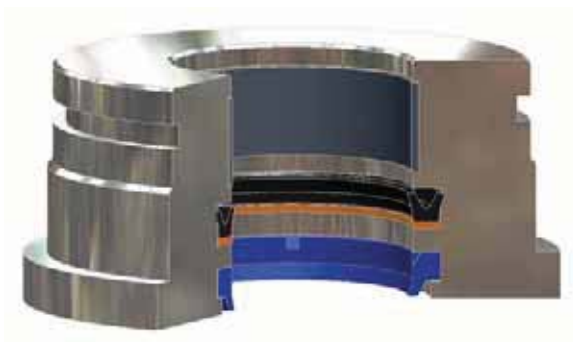
Standard Materials*	Temperature	Max. Pressure Range**
Z4651D60	-65°F to 275°F (-54°C to 135°C)	7,000 psi (482 bar)
Z4729D65	-65°F to 275°F (-54°C to 135°C)	7,000 psi (482 bar)

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

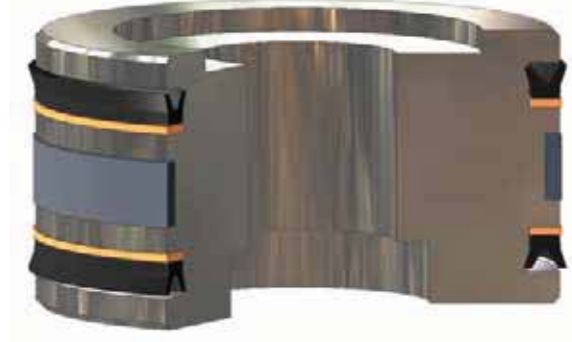
**\*\*** 4,900 psi (337 bar) with tight-tolerance wear rings.  
3,500 psi (241 bar) with standard-tolerance wear rings.



8700 Cross-Section



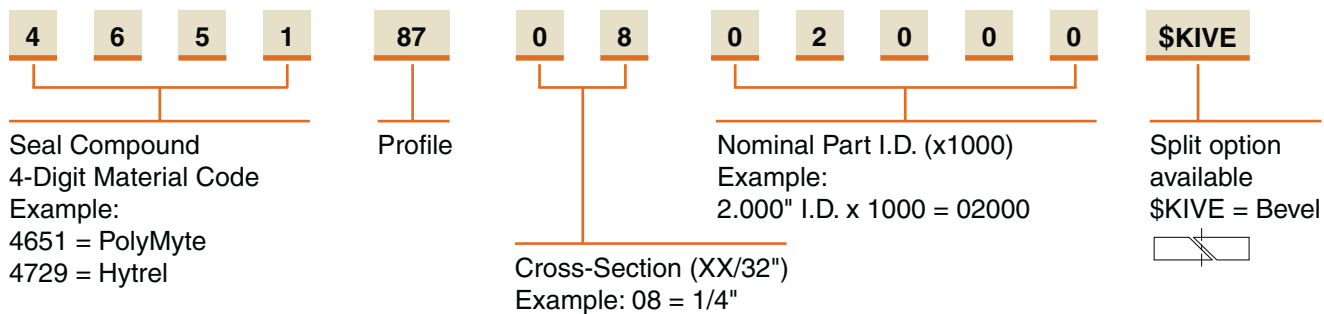
8700 installed in Rod Gland



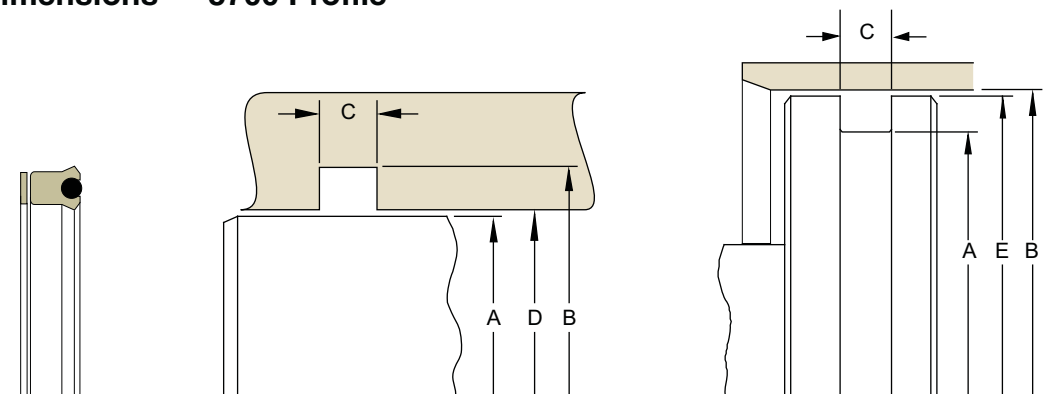
8700 installed in Piston Gland

### Part Number Nomenclature — 8700 Profile

Table 10-5. 8700 Profile — Inch



### Gland Dimensions — 8700 Profile



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

Table 10-6. 8700 Gland Dimensions (Standard) — Inch<sup>6</sup>

A	B	C	D	E	Part Number			
Rod Diameter	(Rod) Groove Diameter	(Rod) Groove Width	(Rod) Throat Diameter*			Compound Code	Profile Code	
(Bore) Groove Diameter	Bore Diameter	(Bore) Groove Width		(Bore) Piston Diameter**	Radial Cross Section			
0.375	0.625	Add .062" to seal groove width	0.376	0.624	0.1250	XXXX	87	0400375
0.500	0.750		0.501	0.749	0.1250	XXXX	87	0400500
0.625	0.875		0.626	0.874	0.1250	XXXX	87	0400625
0.750	1.000		0.751	0.999	0.1250	XXXX	87	0400750
1.000	1.250		1.001	1.249	0.1250	XXXX	87	0401000
1.000	1.312		1.001	1.311	0.1560	XXXX	87	0501000
1.187	1.500		1.188	1.499	0.1565	XXXX	87	0501187
1.250	1.625		1.251	1.624	0.1875	XXXX	87	0601250
1.250	1.750		1.251	1.749	0.2500	XXXX	87	0801250
1.375	1.687		1.376	1.686	0.1560	XXXX	87	0501375
1.375	1.750		1.377	1.749	0.1875	XXXX	87	0601375
1.500	1.812		1.501	1.811	0.1560	XXXX	87	0501500
1.500	1.875		1.502	1.874	0.1875	XXXX	87	0601500
1.500	2.250		1.501	2.249	0.2500	XXXX	87	0801500
1.625	2.000		1.627	1.999	0.1875	XXXX	87	0601625
1.750	2.125		1.752	2.124	0.1875	XXXX	87	0601750

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

**8700 Profile**

**Table 10-6. 8700 Gland Dimensions — Inch (Continued)**

A	B	C	D	E	Part Number			
Rod Diameter	(Rod) Groove Diameter	(Rod) Groove Width	(Rod) Throat Diameter*					
(Bore) Groove Diameter	Bore Diameter	(Bore) Groove Width		(Bore) Piston Diameter**	Radial Cross Section	Compound Code	Profile Code	
2.000	2.375	Add .062" to seal groove width	2.002	2.374	0.1875	XXXX	87	0602000
2.000	2.500		2.001	2.499	0.2500	XXXX	87	0802000
2.125	2.500		2.127	2.499	0.1875	XXXX	87	0602125
2.500	2.937		2.501	2.936	0.2185	XXXX	87	0702500
2.812	3.250		2.813	3.249	0.2190	XXXX	87	0702812
3.000	3.437		3.001	3.436	0.2185	XXXX	87	0703000
3.062	3.500		3.063	3.499	0.2190	XXXX	87	0703062
3.250	3.750		3.251	3.749	0.2500	XXXX	87	0803250
3.500	4.000		3.501	3.999	0.2500	XXXX	87	0803500
3.750	4.250		3.751	4.249	0.2500	XXXX	87	0803750
4.000	4.500		4.001	4.499	0.2500	XXXX	87	0804000
4.500	5.000		4.501	4.999	0.2500	XXXX	87	0804500
5.000	5.562		5.001	5.561	0.2810	XXXX	87	0905000
5.375	6.000		5.377	5.998	0.3125	XXXX	87	1005375
5.375	6.125		5.377	6.123	0.3750	XXXX	87	1205375
5.437	6.000		5.438	5.999	0.2815	XXXX	87	0905437
5.500	6.125		5.502	6.123	0.3125	XXXX	87	1005500
6.375	7.000		6.377	6.998	0.3125	XXXX	87	1006375
6.437	7.000		6.438	6.999	0.2815	XXXX	87	0906437
7.000	7.625		7.002	7.623	0.3125	XXXX	87	1007000
7.375	8.000		7.377	7.998	0.3125	XXXX	87	1007375
8.500	9.125		8.502	9.123	0.3125	XXXX	87	1008500
10.000	10.750		10.002	10.748	0.3750	XXXX	87	1210000
11.000	12.000		11.002	11.998	0.5000	XXXX	87	1611000
11.250	12.000	11.252	11.998	0.3750	XXXX	87	1211250	

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

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

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

# Back-up Ring 5100 Profile

Catalog EPS 5370/USA



## 5100 Profile (5100 Series), O-ring Groove Back-up

Parker's 5100 Series back-up rings offer extrusion resistance up to 7,000 psi for dynamic applications and up to 20,000 psi for static applications. They are physically interchangeable with most existing o-ring back-ups. Our easy to identify orange colored 4651 PolyMyte material used with this profile, provides outstanding extrusion resistance when compared to hard nitrile back-ups plus offers extended fluid compatibility. 5100 Series back-ups are designed to meet standard industrial o-ring groove dimensions for single or dual back-up groove designs and will always install in the proper direction.

**Note:** For custom tolerances for rod or piston application, please contact your Parker Seal representative.

## Technical Data

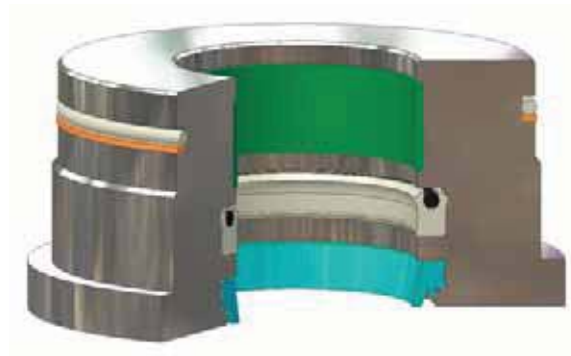
Standard Materials*	Temperature	Max. Pressure Range	
		Dynamic**	Static
Z4651D60	-65°F to 275°F (-54°C to 135°C)	7,000 psi (482 bar)	20,000 psi (1,379 bar)
Z4729D65	-65°F to 275°F (-54°C to 135°C)	7,000 psi (482 bar)	20,000 psi (1,379 bar)

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

\*\* 4,900 psi (337 bar) with tight-tolerance wear rings.  
3,500 psi (241 bar) with standard-tolerance wear rings.



5100 Cross-Section



5100 installed in Rod Gland

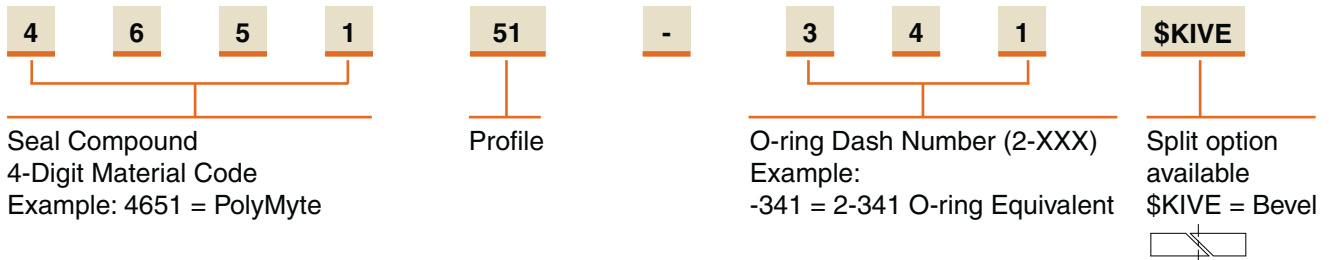
10

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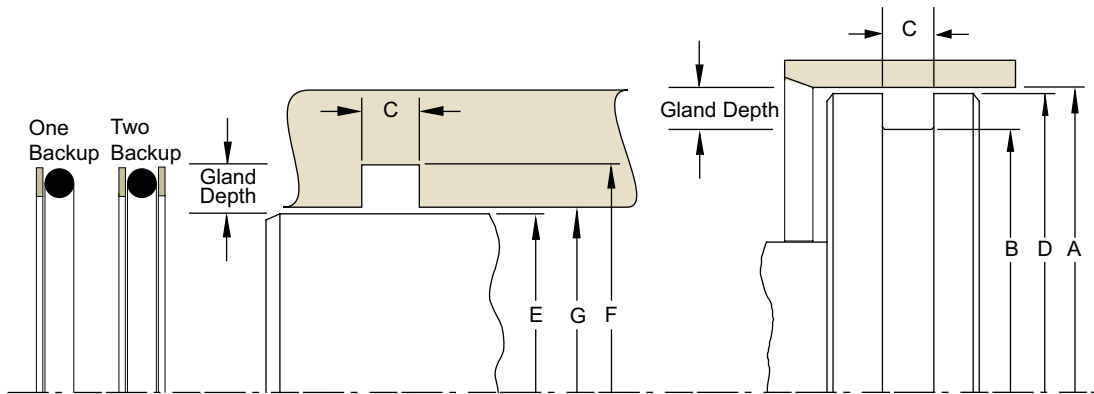
## 5100 Profile

### Part Number Nomenclature — 5100 Profile

Table 10-7. 5100 Profile — Inch



### Gland Dimensions — 5100 Profile



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

Table 10-8. 5100 Gland Dimensions (Standard) — Inch

	O-ring 2-Size AS568A-	Tooled	Piston			Rod			Groove Width	
			A Bore Diameter +.002/-.000	B Groove Diameter +.000/-.002	D Piston Diameter** +.000/-.001	E Rod Diameter +.002/.000	F Groove Diameter +.002/.000	G Throat Diameter* +.001/-.000	C1 One Back-up +.005/.000	C2 Two Back-up +.005/-.000
Recommended for Dynamic	006	X	0.249	0.139	0.247	0.124	0.234	0.126	0.138	0.205
	007		0.280	0.170	0.278	0.155	0.265	0.157	0.138	0.205
	008	X	0.311	0.201	0.309	0.186	0.296	0.188	0.138	0.205
	009	X	0.343	0.233	0.341	0.218	0.328	0.220	0.138	0.205
	010	X	0.374	0.264	0.372	0.249	0.359	0.251	0.138	0.205
	011	X	0.436	0.326	0.434	0.311	0.421	0.313	0.138	0.205
Not Recommended for Dynamic	012	X	0.499	0.389	0.497	0.374	0.484	0.376	0.138	0.205
	013	X	0.561	0.451	0.559	0.436	0.546	0.439	0.138	0.205
	014	X	0.624	0.514	0.622	0.499	0.609	0.501	0.138	0.205
	015	X	0.686	0.576	0.684	0.561	0.671	0.564	0.138	0.205
	016	X	0.749	0.639	0.747	0.624	0.734	0.626	0.138	0.205
	017	X	0.811	0.701	0.809	0.686	0.796	0.689	0.138	0.205
	018	X	0.874	0.764	0.872	0.749	0.856	0.751	0.138	0.205
	019	X	0.936	0.826	0.934	0.811	0.921	0.814	0.138	0.205
	020	X	0.999	0.889	0.997	0.874	0.984	0.876	0.138	0.205
	021	X	1.061	0.951	1.059	0.936	1.046	0.939	0.138	0.205
	022	X	1.124	1.014	1.122	0.999	1.109	1.001	0.138	0.205
	023	X	1.186	1.076	1.184	1.061	1.171	1.064	0.138	0.205

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

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

Those Piston O.D.'s shown in darker shading may cause the back-up to exceed its ability to recover from stretching. If so, select a material with greater elongation or use a two piece piston.

**Table 10-8. 5100 Gland Dimensions — Inch (Continued)**

	O-ring 2-Size AS568A-	Tooled	Piston			Rod			Groove Width	
			A Bore Diameter +.002/-.000	B Groove Diameter +.000/-.002	D Piston Diameter** +.000/-.001	E Rod Diameter +.002/0.000	F Groove Diameter +.002/0.000	G Throat Diameter* +.001/-.000	C1 One Back-up +.005/0.000	C2 Two Back-up +.005/-.000
Not Recommended for Dynamic	024	X	1.249	1.139	1.247	1.124	1.234	1.126	0.138	0.205
	025	X	1.311	1.201	1.309	1.186	1.296	1.189	0.138	0.205
	026	X	1.374	1.264	1.372	1.249	1.359	1.251	0.138	0.205
	027	X	1.436	1.326	1.434	1.311	1.421	1.313	0.138	0.205
	028	X	1.499	1.389	1.497	1.374	1.484	1.376	0.138	0.205
	029		1.624	1.514	1.622	1.499	1.609	1.501	0.138	0.205
	030		1.749	1.639	1.747	1.624	1.734	1.626	0.138	0.205
	031	X	1.874	1.764	1.872	1.749	1.859	1.751	0.138	0.205
	032		1.999	1.889	1.997	1.874	1.984	1.876	0.138	0.205
	033	X	2.124	2.014	2.122	1.999	2.109	2.001	0.138	0.205
	034		2.249	2.139	2.247	2.124	2.234	2.126	0.138	0.205
	035		2.374	2.264	2.372	2.249	2.359	2.251	0.138	0.205
	036	X	2.499	2.389	2.497	2.374	2.484	2.376	0.138	0.205
	037		2.624	2.514	2.622	2.499	2.609	2.501	0.138	0.205
	038		2.749	2.639	2.747	2.624	2.734	2.626	0.138	0.205
039		2.874	2.764	2.872	2.749	2.859	2.751	0.138	0.205	
040	X	2.999	2.889	2.997	2.874	2.984	2.876	0.138	0.205	
041		3.124	3.014	3.122	2.999	3.109	3.001	0.138	0.205	
042		3.374	3.264	3.372	3.249	3.359	3.251	0.138	0.205	
043	X	3.874	3.764	3.872	3.749	3.859	3.751	0.138	0.205	
Recommended for Dynamic	104		0.312	0.136	0.310	0.124	0.300	0.126	0.171	0.238
	105		0.343	0.167	0.341	0.155	0.331	0.157	0.171	0.238
	106		0.374	0.198	0.372	0.186	0.362	0.188	0.171	0.238
	107		0.406	0.230	0.404	0.218	0.394	0.220	0.171	0.238
	108		0.437	0.261	0.435	0.249	0.425	0.251	0.171	0.238
	109		0.499	0.323	0.497	0.311	0.487	0.313	0.171	0.238
	110	X	0.562	0.386	0.560	0.374	0.550	0.376	0.171	0.238
	111	X	0.624	0.448	0.622	0.436	0.612	0.438	0.171	0.238
	112	X	0.687	0.511	0.685	0.499	0.675	0.501	0.171	0.238
	113	X	0.749	0.573	0.747	0.561	0.737	0.563	0.171	0.238
	114	X	0.812	0.636	0.810	0.624	0.800	0.626	0.171	0.238
	115	X	0.874	0.698	0.872	0.686	0.862	0.688	0.171	0.238
116	X	0.937	0.761	0.935	0.749	0.925	0.751	0.171	0.238	
117	X	0.999	0.823	0.997	0.811	0.987	0.814	0.171	0.238	
Not Recommended for Dynamic	118	X	1.062	0.886	1.060	0.874	1.050	0.876	0.171	0.238
	119	X	1.124	0.948	1.122	0.936	1.112	0.939	0.171	0.238
	120	X	1.187	1.011	1.185	0.999	1.175	1.001	0.171	0.238
	121	X	1.249	1.073	1.247	1.061	1.237	1.063	0.171	0.238
	122	X	1.312	1.136	1.310	1.124	1.300	1.126	0.171	0.238
	123	X	1.374	1.198	1.372	1.186	1.362	1.188	0.171	0.238
	124	X	1.437	1.261	1.435	1.249	1.425	1.251	0.171	0.238
	125	X	1.499	1.323	1.497	1.311	1.487	1.313	0.171	0.238
	126	X	1.562	1.386	1.560	1.374	1.550	1.376	0.171	0.238
	127	X	1.624	1.448	1.622	1.436	1.612	1.438	0.171	0.238
	128	X	1.687	1.511	1.685	1.499	1.675	1.501	0.171	0.238
	129	X	1.749	1.573	1.747	1.561	1.737	1.563	0.171	0.238

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

Those Piston O.D.'s shown in darker shading may cause the back-up to exceed its ability to recover from stretching. If so, select a material with greater elongation or use a two piece piston.



Table 10-8. 5100 Gland Dimensions — Inch (Continued)

	O-ring 2-Size AS568A-	Tooled	Piston			Rod			Groove Width	
			A Bore Diameter +.002/-0.000	B Groove Diameter +.000/-0.002	D Piston Diameter** +.000/-0.001	E Rod Diameter +.002/0.000	F Groove Diameter +.002/0.000	G Throat Diameter* +.001/-0.000	C1 One Back-up +.005/0.000	C2 Two Back-up +.005/-0.000
Not Recommended for Dynamic	130		1.812	1.636	1.810	1.624	1.800	1.626	0.171	0.238
	131	X	1.874	1.698	1.872	1.686	1.862	1.688	0.171	0.238
	132	X	1.937	1.761	1.935	1.749	1.925	1.751	0.171	0.238
	133	X	1.999	1.823	1.997	1.811	1.987	1.813	0.171	0.238
	134		2.062	1.886	2.060	1.874	2.050	1.876	0.171	0.238
	135		2.124	1.948	2.122	1.936	2.112	1.938	0.171	0.238
	136		2.187	2.011	2.185	1.999	2.175	2.001	0.171	0.238
	137	X	2.249	2.073	2.247	2.061	2.237	2.063	0.171	0.238
	138		2.312	2.136	2.310	2.124	2.300	2.126	0.171	0.238
	139		2.374	2.198	2.372	2.186	2.362	2.188	0.171	0.238
	140		2.437	2.261	2.435	2.249	2.425	2.251	0.171	0.238
	141	X	2.499	2.323	2.497	2.311	2.487	2.313	0.171	0.238
	142	X	2.562	2.386	2.560	2.374	2.550	2.376	0.171	0.238
	143	X	2.624	2.448	2.622	2.436	2.612	2.438	0.171	0.238
	144	X	2.687	2.511	2.685	2.499	2.675	2.501	0.171	0.238
	145		2.749	2.573	2.747	2.561	2.737	2.563	0.171	0.238
	146		2.812	2.636	2.810	2.624	2.800	2.626	0.171	0.238
	147		2.874	2.698	2.872	2.686	2.862	2.688	0.171	0.238
	148		2.937	2.761	2.935	2.749	2.925	2.751	0.171	0.238
149	X	2.999	2.823	2.997	2.811	2.987	2.813	0.171	0.238	
Recommended for Dynamic	201		0.437	0.195	0.434	0.185	0.427	0.188	0.208	0.275
	202		0.500	0.258	0.497	0.248	0.490	0.251	0.208	0.275
	203		0.562	0.320	0.559	0.310	0.552	0.313	0.208	0.275
	204		0.625	0.383	0.622	0.373	0.615	0.376	0.208	0.275
	205		0.687	0.445	0.684	0.435	0.677	0.438	0.208	0.275
	206	X	0.750	0.508	0.747	0.498	0.740	0.501	0.208	0.275
	207		0.812	0.570	0.809	0.560	0.802	0.563	0.208	0.275
	208		0.875	0.633	0.872	0.623	0.865	0.626	0.208	0.275
	209	X	0.937	0.695	0.934	0.685	0.927	0.688	0.208	0.275
	210	X	1.000	0.758	0.997	0.748	0.990	0.751	0.208	0.275
	211	X	1.062	0.820	1.059	0.810	1.052	0.813	0.208	0.275
	212	X	1.125	0.883	1.122	0.873	1.115	0.876	0.208	0.275
	213	X	1.187	0.945	1.184	0.935	1.177	0.938	0.208	0.275
	214	X	1.250	1.008	1.247	0.998	1.240	1.001	0.208	0.275
215	X	1.312	1.070	1.309	1.060	1.302	1.063	0.208	0.275	
216	X	1.375	1.133	1.372	1.123	1.365	1.126	0.208	0.275	
217	X	1.437	1.195	1.434	1.185	1.427	1.188	0.208	0.275	
218	X	1.500	1.258	1.497	1.248	1.490	1.251	0.208	0.275	
219		1.562	1.320	1.559	1.310	1.552	1.313	0.208	0.275	
220	X	1.625	1.383	1.622	1.373	1.615	1.376	0.208	0.275	
221	X	1.687	1.445	1.684	1.435	1.677	1.438	0.208	0.275	
222	X	1.750	1.508	1.747	1.498	1.740	1.501	0.208	0.275	

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

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

Those Piston O.D.'s shown in darker shading may cause the back-up to exceed its ability to recover from stretching. If so, select a material with greater elongation or use a two piece piston.



Table 10-8. 5100 Gland Dimensions — Inch (Continued)

	O-ring 2-Size AS568A-	Tooled	Piston			Rod			Groove Width	
			A Bore Diameter +.002/-0.000	B Groove Diameter +.000/-0.002	D Piston Diameter** +.000/-0.001	E Rod Diameter +.002/0.000	F Groove Diameter +.002/0.000	G Throat Diameter* +.001/-0.000	C1 One Back-up +.005/0.000	C2 Two Back-up +.005/-0.000
Not Recommended for Dynamic	223	X	1.875	1.633	1.872	1.623	1.865	1.626	0.208	0.275
	224	X	2.000	1.758	1.997	1.748	1.990	1.751	0.208	0.275
	225	X	2.125	1.883	2.122	1.873	2.115	2.876	0.208	0.275
	226	X	2.250	2.008	2.247	1.998	2.240	2.001	0.208	0.275
	227	X	2.375	2.133	2.372	2.123	2.365	2.126	0.208	0.275
	228	X	2.500	2.258	2.497	2.248	2.490	2.501	0.208	0.275
	229	X	2.625	2.383	2.622	2.373	2.615	2.376	0.208	0.275
	230	X	2.750	2.508	2.747	2.498	2.740	2.501	0.208	0.275
	231	X	2.875	2.633	2.872	2.623	2.865	2.626	0.208	0.275
	232	X	3.000	2.758	2.997	2.748	2.990	2.751	0.208	0.275
	233	X	3.125	2.883	3.122	2.873	3.115	2.876	0.208	0.275
	234	X	3.250	3.008	3.247	2.998	3.240	3.001	0.208	0.275
	235		3.375	3.133	3.372	3.123	3.365	3.126	0.208	0.275
	236	X	3.500	3.258	3.497	3.248	3.490	3.251	0.208	0.275
	237	X	3.625	3.383	3.622	3.373	3.615	3.376	0.208	0.275
	238	X	3.750	3.508	3.747	3.498	3.740	3.501	0.208	0.275
	239		3.875	3.633	3.872	3.623	3.865	3.626	0.208	0.275
	240	X	4.000	3.758	3.997	3.748	3.990	3.751	0.208	0.275
	241		4.125	3.883	4.122	3.873	4.115	3.876	0.208	0.275
	242	X	4.250	4.008	4.247	3.998	4.240	4.001	0.208	0.275
	243		4.375	4.133	4.372	4.123	4.365	4.126	0.208	0.275
	244	X	4.500	4.258	4.497	4.248	4.490	4.251	0.208	0.275
	245	X	4.625	4.383	4.622	4.373	4.615	4.376	0.208	0.275
	246	X	4.750	4.508	4.747	4.498	4.740	4.501	0.208	0.275
	247	X	4.875	4.633	4.872	4.623	4.865	4.626	0.208	0.275
	248	X	5.000	4.758	4.997	4.748	4.990	4.751	0.208	0.275
	249		5.125	4.883	5.122	4.873	5.115	4.876	0.208	0.275
250	X	5.250	5.008	5.247	4.998	5.240	5.001	0.208	0.275	
251		5.375	5.133	5.372	5.123	5.365	5.126	0.208	0.275	
252	X	5.500	5.258	5.497	5.248	5.490	5.251	0.208	0.275	
253		5.625	5.383	5.622	5.373	5.615	5.376	0.208	0.275	
254		5.750	5.508	5.747	5.498	5.740	5.501	0.208	0.275	
255		5.875	5.633	5.872	5.623	5.865	5.626	0.208	0.275	
256	X	6.000	5.758	5.997	5.748	5.990	5.751	0.208	0.275	
257		6.125	5.883	6.122	5.873	6.115	5.876	0.208	0.275	
258	X	6.250	6.008	6.247	5.998	6.240	6.001	0.208	0.275	
259		6.500	6.258	6.497	6.248	6.490	6.251	0.208	0.275	
260		6.750	6.508	6.747	6.498	6.740	6.501	0.208	0.275	
261		7.000	6.758	6.997	6.748	6.990	6.751	0.208	0.275	
262		7.250	7.008	7.247	6.998	7.240	7.001	0.208	0.275	
263		7.500	7.258	7.497	7.248	7.490	7.251	0.208	0.275	
264	X	7.750	7.508	7.747	7.498	7.740	7.501	0.208	0.275	
265	X	8.000	7.758	7.997	7.748	7.990	7.751	0.208	0.275	
277	X	11.750	11.508	11.747	11.498	11.740	11.501	0.208	0.275	

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

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

Those Piston O.D.'s shown in darker shading may cause the back-up to exceed its ability to recover from stretching. If so, select a material with greater elongation or use a two piece piston.

Table 10-8. 5100 Gland Dimensions — Inch (Continued)

	O-ring 2-Size AS568A-	Tooled	Piston			Rod			Groove Width	
			A Bore Diameter +.002/-0.000	B Groove Diameter +.000/-0.002	D Piston Diameter** +.000/-0.001	E Rod Diameter +.002/0.000	F Groove Diameter +.002/0.000	G Throat Diameter* +.001/-0.000	C1 One Back-up +.005/0.000	C2 Two Back-up +.005/-0.000
Recommended for Dynamic	309	X	0.812	0.442	0.809	0.435	0.805	0.438	0.311	0.410
	310	X	0.875	0.505	0.872	0.498	0.868	0.501	0.311	0.410
	311		0.937	0.567	0.934	0.560	0.930	0.563	0.311	0.410
	312		1.000	0.630	0.997	0.623	0.993	0.626	0.311	0.410
	313		1.062	0.692	1.059	0.685	1.055	0.688	0.311	0.410
	314	X	1.125	0.755	1.122	0.748	1.118	0.751	0.311	0.410
	315		1.187	0.817	1.184	0.810	1.180	0.813	0.311	0.410
Recommended for Dynamic	316	X	1.250	0.880	1.247	0.873	1.243	0.876	0.311	0.410
	317		1.312	0.942	1.309	0.935	1.305	0.938	0.311	0.410
	318	X	1.375	1.005	1.372	0.998	1.368	1.001	0.311	0.410
	319		1.437	1.067	1.434	1.060	1.430	1.063	0.311	0.410
	320		1.500	1.130	1.497	1.123	1.493	1.126	0.311	0.410
	321		1.562	1.192	1.559	1.185	1.555	1.188	0.311	0.410
	322	X	1.625	1.255	1.622	1.248	1.618	1.251	0.311	0.410
	323		1.687	1.317	1.684	1.310	1.680	1.313	0.311	0.410
	324		1.750	1.380	1.747	1.373	1.743	1.376	0.311	0.410
	325	X	1.875	1.505	1.872	1.498	1.868	1.501	0.311	0.410
	326	X	2.000	1.630	1.997	1.623	1.993	1.626	0.311	0.410
	327	X	2.125	1.755	2.122	1.748	2.118	1.751	0.311	0.410
	328	X	2.250	1.880	2.247	1.873	2.243	1.876	0.311	0.410
	329	X	2.375	2.005	2.372	1.998	2.368	2.001	0.311	0.410
	330	X	2.500	2.130	2.497	2.123	2.493	2.126	0.311	0.410
	331	X	2.625	2.255	2.622	2.248	2.618	2.251	0.311	0.410
	332	X	2.750	2.380	2.747	2.373	2.743	2.376	0.311	0.410
	333	X	2.875	2.505	2.872	2.498	2.868	2.501	0.311	0.410
	334	X	3.000	2.630	2.997	2.623	2.993	2.626	0.311	0.410
	335	X	3.125	2.755	3.122	2.748	3.118	2.751	0.311	0.410
	336	X	3.250	2.880	3.247	2.873	3.243	2.876	0.311	0.410
	337	X	3.375	3.005	3.372	2.998	3.368	3.001	0.311	0.410
	338	X	3.500	3.130	3.497	3.123	3.493	3.126	0.311	0.410
	339	X	3.625	3.255	3.622	3.248	3.618	3.251	0.311	0.410
	340	X	3.750	3.380	3.747	3.373	3.743	3.376	0.311	0.410
	341	X	3.875	3.505	3.872	3.498	3.868	3.501	0.311	0.410
	342	X	4.000	3.630	3.997	3.623	3.993	3.626	0.311	0.410
	343	X	4.125	3.755	4.122	3.748	4.118	3.751	0.311	0.410
	344	X	4.250	3.880	4.247	3.873	4.243	3.876	0.311	0.410
	345	X	4.375	4.005	4.372	3.998	4.368	4.001	0.311	0.410
	346	X	4.500	4.130	4.497	4.123	4.493	4.126	0.311	0.410
	347	X	4.625	4.255	4.622	4.248	4.618	4.251	0.311	0.410
	348	X	4.750	4.380	4.747	4.373	4.743	4.376	0.311	0.410
	349	X	4.875	4.505	4.872	4.498	4.868	4.501	0.311	0.410

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

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

Those Piston O.D.'s shown in darker shading may cause the back-up to exceed its ability to recover from stretching. If so, select a material with greater elongation or use a two piece piston.

Table 10-8. 5100 Gland Dimensions — Inch (Continued)

	O-ring 2-Size AS568A-	Tooled	Piston			Rod			Groove Width	
			A Bore Diameter +.002/-.000	B Groove Diameter +.000/-.002	D Piston Diameter** +.000/-.001	E Rod Diameter +.002/-.000	F Groove Diameter +.002/-.000	G Throat Diameter* +.001/-.000	C1 One Back-up +.005/-.000	C2 Two Back-up +.005/-.000
Not Recommended for Dynamic	350		5.000	4.630	4.997	4.623	4.993	4.626	0.311	0.410
	351		5.125	4.755	5.122	4.748	5.118	4.751	0.311	0.410
	352	X	5.250	4.880	5.247	4.873	5.243	4.876	0.311	0.410
	353		5.375	5.005	5.372	4.998	5.368	5.001	0.311	0.410
	354	X	5.500	5.130	5.497	5.123	5.493	5.126	0.311	0.410
	355		5.625	5.255	5.622	5.248	5.618	5.251	0.311	0.410
	356		5.750	5.380	5.747	5.373	5.743	5.376	0.311	0.410
	357		5.875	5.505	5.872	5.498	5.868	5.501	0.311	0.410
	358	X	6.000	5.630	5.997	5.623	5.993	5.626	0.311	0.410
	359		6.125	5.755	6.122	5.748	6.118	5.751	0.311	0.410
	360		6.250	5.880	6.247	5.873	6.243	5.876	0.311	0.410
361	X	6.375	6.005	6.372	5.998	6.368	6.001	0.311	0.410	
Recommended for Dynamic	425	X	5.002	4.528	4.998	4.497	4.971	4.501	0.408	0.538
	426		5.127	4.653	5.123	4.622	5.096	4.626	0.408	0.538
	427		5.252	4.778	5.248	4.747	5.221	4.751	0.408	0.538
	428		5.377	4.903	5.373	4.872	5.346	4.876	0.408	0.538
	429	X	5.502	5.028	5.498	4.997	5.471	5.001	0.408	0.538
	430		5.627	5.153	5.623	5.122	5.596	5.126	0.408	0.538
	431		5.752	5.278	5.748	5.247	5.721	5.251	0.408	0.538
	432	X	5.877	5.403	5.873	5.372	5.846	5.376	0.408	0.538
	433	X	6.002	5.528	5.998	5.497	5.971	5.501	0.408	0.538
	434		6.127	5.653	6.123	5.622	6.096	5.626	0.408	0.538
	435		6.252	5.778	6.248	5.747	6.221	5.751	0.408	0.538
	436		6.377	5.903	6.373	5.872	6.346	5.876	0.408	0.538
	437	X	6.502	6.028	6.498	5.997	6.471	6.001	0.408	0.538
	438		6.752	6.278	6.748	6.247	6.721	6.251	0.408	0.538
	439	X	7.002	6.528	6.998	6.497	6.971	6.501	0.408	0.538
	440		7.252	6.778	7.248	6.747	7.221	6.751	0.408	0.538
	441		7.502	7.028	7.498	6.997	7.471	7.001	0.408	0.538
	442		7.752	7.278	7.748	7.247	7.721	7.251	0.408	0.538
	443	X	8.002	7.528	7.998	7.497	7.971	7.501	0.408	0.538
	444		8.252	7.778	8.248	7.747	8.221	7.751	0.408	0.538
	445		8.502	8.028	8.498	7.997	8.471	8.001	0.408	0.538
	446	X	9.002	8.528	8.998	8.497	8.971	8.501	0.408	0.538
	447		9.502	9.028	9.498	8.997	9.471	9.001	0.408	0.538
448		10.002	9.528	9.998	9.497	9.971	9.501	0.408	0.538	
449		10.502	10.028	10.498	9.997	10.471	10.001	0.408	0.538	
450		11.002	10.528	10.998	10.497	10.971	10.501	0.408	0.538	
451	X	11.502	11.028	11.498	10.997	11.471	11.001	0.408	0.538	
452		12.002	11.528	11.998	11.497	11.971	11.501	0.408	0.538	
453	X	12.502	12.028	12.498	11.997	12.471	12.001	0.408	0.538	

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

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

Those Piston O.D.'s shown in darker shading may cause the back-up to exceed its ability to recover from stretching. If so, select a material with greater elongation or use a two piece piston.

Table 10-8. 5100 Gland Dimensions — Inch (Continued)

	O-ring 2-Size AS568A-	Tooled	Piston			Rod			Groove Width	
			A Bore Diameter +.002/-.000	B Groove Diameter +.000/-.002	D Piston Diameter** +.000/-.001	E Rod Diameter +.002/.000	F Groove Diameter +.002/.000	G Throat Diameter* +.001/-.000	C1 One Back-up +.005/.000	C2 Two Back-up +.005/-.000
Recommended for Dynamic	454		13.002	12.528	12.998	12.497	12.971	12.501	0.408	0.538
	455		13.502	13.028	13.498	12.997	13.471	13.001	0.408	0.538
	456		14.002	13.528	13.998	13.497	13.971	13.501	0.408	0.538
	457		14.502	14.028	14.498	13.997	14.471	14.001	0.408	0.538
	458		15.002	14.528	14.998	14.497	14.971	14.501	0.408	0.538
	459		15.502	15.028	15.498	14.997	15.471	15.001	0.408	0.538
Not Recommended for Dynamic	460		16.002	15.528	15.998	15.497	15.971	15.501	0.408	0.538
	461		16.502	16.028	16.498	15.997	16.471	16.001	0.408	0.538
	462		17.002	16.528	16.998	16.497	16.971	16.501	0.408	0.538
	463		17.502	17.028	17.498	16.997	17.471	17.001	0.408	0.538
	464		18.002	17.528	17.998	17.497	17.971	17.501	0.408	0.538
	465		18.502	18.028	18.498	17.997	18.471	18.001	0.408	0.538
	466	X	19.002	18.528	18.998	18.497	18.971	18.501	0.408	0.538
	467		19.502	19.028	19.498	18.997	19.471	19.001	0.408	0.538
	468		20.002	19.528	19.998	19.497	19.971	19.501	0.408	0.538
	469		20.502	20.028	20.498	19.997	20.471	20.001	0.408	0.538
	470		21.502	21.028	21.498	20.997	21.471	21.001	0.408	0.538
	471		22.502	22.028	22.498	21.997	22.471	22.001	0.408	0.538
	472	X	23.502	23.028	23.498	22.997	23.471	23.001	0.408	0.538
	473		24.502	24.028	24.498	23.997	24.471	24.001	0.408	0.538
474		25.502	25.028	25.498	24.997	25.471	25.001	0.408	0.538	
475	X	26.502	26.028	26.498	25.997	26.471	26.001	0.408	0.538	

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

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

Those Piston O.D.'s shown in darker shading may cause the back-up to exceed its ability to recover from stretching. If so, select a material with greater elongation or use a two piece piston.

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

# Back-up Ring PAB Profile



## PAB Profile, Positively-Actuated Back-up

While modular back-ups require an increase in groove width to be incorporated into the sealing system, because they are integrated with the seal positively-actuated back-ups do not change the required axial groove width. For many profiles, these back-ups can provide the ultimate extrusion resistance while retaining the seal's original groove dimensions. While the most common material used to manufacture positively-actuated back-ups is nylon, it is not uncommon to see applications that require materials such as UltraCOMP, PTFE or polyacetal.

Due to the nature of this product line and the design relationship between the back-up and the seal, parts are sold only as part of an assembly that includes the seal design best suited to the application.

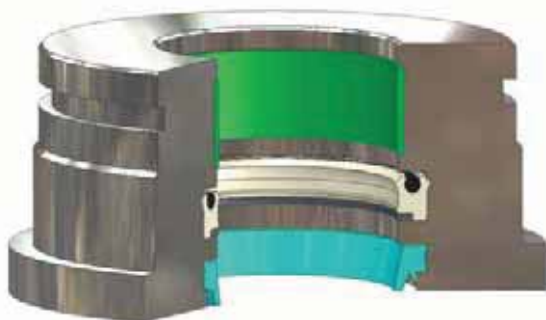
Positively-actuated back-ups can be incorporated into profiles such as the BPP and BD. Tooling may be required.

## Technical Data

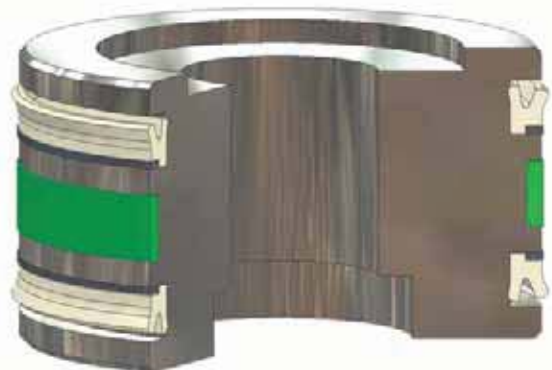
Standard Materials*	Temperature	Max. Pressure Range**	
<b>Rod</b>			* <b>Alternate Materials:</b> For applications that may require an alternate material, please contact your local Parker Seal representative.
R0 (Virgin PTFE)	-65°F to 250°F (-54°C to 121°C)	5,000 psi (344 bar)	
R1 (Nylatron)	-20°F to 250°F (-29°C to 121°C)	3,000 psi (206 bar)	
R12 (PEEK)	-65°F to 500°F (-54°C to 260°C)	10,000 psi (689 bar)	
<b>Piston</b>			** 7,000 psi (482 bar) with tight-tolerance wear rings. 5,000 psi (344 bar) with standard-tolerance wear rings.
P0 (Virgin PTFE)	-65°F to 250°F (-54°C to 121°C)	5,000 psi (344 bar)	
P1 (Nylatron)	-20°F to 250°F (-29°C to 121°C)	3,000 psi (206 bar)	
P12 (PEEK)	-65°F to 500°F (-54°C to 260°C)	10,000 psi (689 bar)	



Positively-Actuated Cross-Section



Positively-Actuated installed in Rod Gland



Positively-Actuated installed in Piston Gland

# Back-up Ring PDB Profile

Catalog EPS 5370/USA



## PDB Profile, PTFE Modular Back-up

PDB back-ups are PTFE anti-extrusion rings. The PDBA and PDBB profiles are designed to retrofit MIL Spec grooves used in commercial applications. PDBA styles are split rings retrofitting MS28774 designs, while PDBB styles are solid rings retrofitting MS27595 designs. Due to the fact that these profiles are designed to commercial grooves, MIL Spec certifications are not available. Although the standard material is virgin PTFE, any of Parker's available PTFE blends can be used.

## Technical Data

### Standard

#### Materials\*

0100 Virgin PTFE

#### Temperature

-425°F to 450°F  
(-254°C to 232°C)

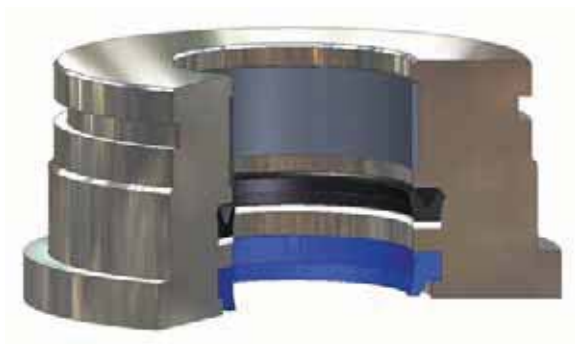
#### Max. Pressure Range

1,500 psi (103 bar) dynamic  
4,500 psi (310 bar) static

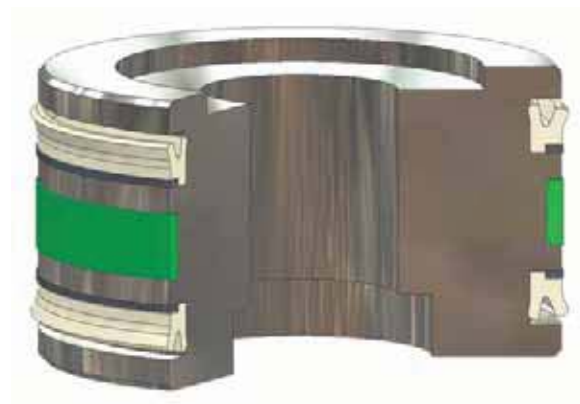
**\*Alternate Materials:** For applications that may require an alternate material, please see Section 3 (Table 3-7) for alternate PTFE materials.



*PDB Cross-Section*



*PDB installed in Rod Gland*



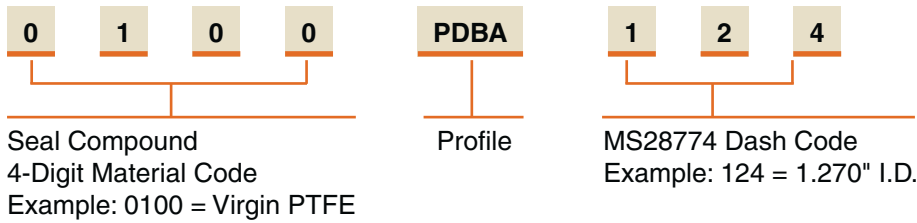
*PDB installed in Piston Gland*

10

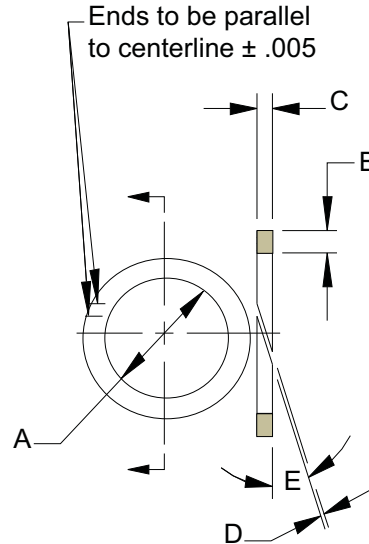
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**Part Number Nomenclature — PDBA Profile**

Table 10-9. PDBA Profile — Inch



**Gland Dimensions — PDBA Profile**



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

Table 10-10. PDBA Gland Dimensions — Inch

Dash Number MS28774	Seal Dimensions				
	A Inside Diameter	B Radial Cross- Section	C Width	D Split Gap	E Split Angle Degree
	+.001/ -.001				
004	0.109	.052/.054	.045/.052	.000/.005	39
005	0.124	.052/.054	.045/.052	.000/.005	33
006	0.140	.052/.054	.045/.052	.000/.005	30
007	0.171	.052/.054	.045/.052	.000/.005	26
008	0.202	.052/.054	.045/.052	.000/.005	22
009	0.234	.052/.054	.045/.052	.000/.005	22
010	0.265	.052/.054	.045/.052	.000/.005	22
011	0.327	.052/.054	.045/.052	.000/.005	22
012	0.390	.052/.054	.045/.052	.000/.005	22
013	0.455	.052/.054	.045/.052	.000/.005	22
014	0.518	.052/.054	.045/.052	.000/.005	22
015	0.580	.052/.054	.045/.052	.000/.005	22
016	0.643	.052/.054	.045/.052	.000/.005	22
017	0.705	.052/.054	.045/.052	.000/.005	22
018	0.768	.052/.054	.045/.052	.000/.005	22
019	0.830	.052/.054	.045/.052	.000/.005	22
020	0.898	.052/.054	.045/.052	.000/.005	22
021	0.960	.052/.054	.045/.052	.000/.005	22

NOTE: Measure Split Gap using a Mandrel with "A" Diameter.

Dash Number MS28774	Seal Dimensions				
	A Inside Diameter	B Radial Cross- Section	C Width	D Split Gap	E Split Angle Degree
	+.001/ -.001				
022	1.023	.052/.054	.045/.052	.000/.005	22
023	1.085	.052/.054	.045/.052	.000/.005	22
024	1.148	.052/.054	.045/.052	.000/.005	22
025	1.210	.052/.054	.045/.052	.000/.005	22
026	1.273	.052/.054	.045/.052	.000/.005	22
027	1.335	.052/.054	.045/.052	.000/.005	22
028	1.398	.052/.054	.045/.052	.000/.005	22
110	0.390	.085/.087	.045/.052	.000/.006	22
111	0.452	.085/.087	.045/.052	.000/.006	22
112	0.515	.085/.087	.045/.052	.000/.006	22
113	0.577	.085/.087	.045/.052	.000/.006	22
114	0.640	.085/.087	.045/.052	.000/.006	22
115	0.702	.085/.087	.045/.052	.000/.006	22
116	0.765	.085/.087	.045/.052	.000/.006	22
117	0.832	.085/.087	.045/.052	.000/.006	22
118	0.895	.085/.087	.045/.052	.000/.006	22
119	0.957	.085/.087	.045/.052	.000/.006	22
120	1.020	.085/.087	.045/.052	.000/.006	22

NOTE: Measure Split Gap using a Mandrel with "A" Diameter.

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**Table 10-10. PDBA Gland Dimensions — Inch (Continued)**

Dash Number MS28774	Seal Dimensions				
	A Inside Diameter	B Radial Cross- Section	C Width	D Split Gap	E Split Angle Degree
	+0.001/ -.001				
121	1.082	.085/.087	.045/.052	.000/.006	22
122	1.145	.085/.087	.045/.052	.000/.006	22
123	1.207	.085/.087	.045/.052	.000/.006	22
124	1.270	.085/.087	.045/.052	.000/.006	22
125	1.332	.085/.087	.045/.052	.000/.006	22
126	1.397	.085/.087	.045/.052	.000/.006	22
127	1.459	.085/.087	.045/.052	.000/.006	22
128	1.522	.085/.087	.045/.052	.000/.006	22
129	1.584	.085/.087	.045/.052	.000/.006	22
130	1.647	.085/.087	.045/.052	.000/.006	22
131	1.709	.085/.087	.045/.052	.000/.006	22
132	1.772	.085/.087	.045/.052	.000/.006	22
133	1.934	.085/.087	.045/.052	.000/.006	22
134	1.897	.085/.087	.045/.052	.000/.006	22
135	1.959	.085/.087	.045/.052	.000/.006	22
136	2.022	.085/.087	.045/.052	.000/.006	22
137	2.084	.085/.087	.045/.052	.000/.006	22
138	2.147	.085/.087	.045/.052	.000/.006	22
139	2.209	.085/.087	.045/.052	.000/.006	22
140	2.258	.085/.087	.045/.052	.000/.006	22
141	2.320	.085/.087	.045/.052	.000/.006	22
142	2.383	.085/.087	.045/.052	.000/.006	22
143	2.445	.085/.087	.045/.052	.000/.006	22
144	2.508	.085/.087	.045/.052	.000/.006	22
145	2.570	.085/.087	.045/.052	.000/.006	22
146	2.633	.085/.087	.045/.052	.000/.006	22
147	2.695	.085/.087	.045/.052	.000/.006	22
148	2.758	.085/.087	.045/.052	.000/.006	22
149	2.820	.085/.087	.045/.052	.000/.006	22
210	0.766	.118/.120	.045/.052	.000/.006	22
211	0.828	.118/.120	.045/.052	.000/.006	22
212	0.891	.118/.120	.045/.052	.000/.006	22
213	0.953	.118/.120	.045/.052	.000/.006	22
214	1.016	.118/.120	.045/.052	.000/.006	22
215	1.078	.118/.120	.045/.052	.000/.006	22
216	1.141	.118/.120	.045/.052	.000/.006	22
217	1.203	.118/.120	.045/.052	.000/.006	22
218	1.266	.118/.120	.045/.052	.000/.006	22
219	1.344	.118/.120	.045/.052	.000/.006	22
220	1.397	.118/.120	.045/.052	.000/.006	22
221	1.459	.118/.120	.045/.052	.000/.006	22
222	1.522	.118/.120	.045/.052	.000/.006	22
223	1.647	.118/.120	.045/.052	.000/.007	22
224	1.772	.118/.120	.045/.052	.000/.007	22
225	1.897	.118/.120	.045/.052	.000/.007	22
226	2.022	.118/.120	.045/.052	.000/.007	22

NOTE: Measure Split Gap using a Mandrel with "A" Diameter.

Dash Number MS28774	Seal Dimensions				
	A Inside Diameter	B Radial Cross- Section	C Width	D Split Gap	E Split Angle Degree
	+0.001/ -.001				
227	2.147	.118/.120	.045/.052	.000/.007	22
228	2.272	.118/.120	.045/.052	.000/.007	22
229	2.397	.118/.120	.045/.052	.000/.007	22
230	2.522	.118/.120	.045/.052	.000/.007	22
231	2.631	.118/.120	.045/.052	.000/.007	22
232	2.756	.118/.120	.045/.052	.000/.007	22
233	2.881	.118/.120	.045/.052	.000/.007	22
234	3.006	.118/.120	.045/.052	.000/.007	22
235	3.131	.118/.120	.045/.052	.000/.007	22
236	3.256	.118/.120	.045/.052	.000/.007	22
237	3.381	.118/.120	.045/.052	.000/.007	22
238	3.506	.118/.120	.045/.052	.000/.007	22
239	3.631	.118/.120	.045/.052	.000/.007	22
240	3.756	.118/.120	.045/.052	.000/.007	22
241	3.881	.118/.120	.045/.052	.000/.007	22
242	4.006	.118/.120	.045/.052	.000/.007	22
243	4.131	.118/.120	.045/.052	.000/.007	22
244	4.256	.118/.120	.045/.052	.000/.007	22
245	4.381	.118/.120	.045/.052	.000/.007	22
246	4.506	.118/.120	.045/.052	.000/.007	22
247	4.631	.118/.120	.045/.052	.000/.007	22
325	1.513	.182/.184	.065/.075	.000/.007	22
326	1.638	.182/.184	.065/.075	.000/.007	22
327	1.763	.182/.184	.065/.075	.000/.007	22
328	1.888	.182/.184	.065/.075	.000/.007	22
329	2.013	.182/.184	.065/.075	.000/.007	22
330	2.138	.182/.184	.065/.075	.000/.007	22
331	2.268	.182/.184	.065/.075	.000/.007	22
332	2.393	.182/.184	.065/.075	.000/.007	22
333	2.518	.182/.184	.065/.075	.000/.007	22
334	2.643	.182/.184	.065/.075	.000/.007	22
335	2.768	.182/.184	.065/.075	.000/.007	22
336	2.893	.182/.184	.065/.075	.000/.007	22
337	3.018	.182/.184	.065/.075	.000/.007	22
338	3.143	.182/.184	.065/.075	.000/.007	22
339	3.273	.182/.184	.065/.075	.000/.007	22
340	3.398	.182/.184	.065/.075	.000/.007	22
341	3.523	.182/.184	.065/.075	.000/.007	22
342	3.648	.182/.184	.065/.075	.000/.007	22
343	3.773	.182/.184	.065/.075	.000/.007	22
344	3.898	.182/.184	.065/.075	.000/.007	22
345	4.028	.182/.184	.065/.075	.000/.007	22
346	4.153	.182/.184	.065/.075	.000/.007	22
347	4.278	.182/.184	.065/.075	.000/.007	22
348	4.403	.182/.184	.065/.075	.000/.007	22
349	4.528	.182/.184	.065/.075	.000/.007	22

NOTE: Measure Split Gap using a Mandrel with "A" Diameter.



Table 10-10. PDBA Gland Dimensions — Inch (Continued)

Dash Number MS28774	Seal Dimensions				
	A Inside Diameter	B Radial Cross- Section	C Width	D Split Gap	E Split Angle Degree
	+0.001/ -0.001				
425	4.551	.235/.237	.106/.110	.000/.008	22
426	4.676	.235/.237	.106/.110	.000/.008	22
427	4.801	.235/.237	.106/.110	.000/.008	22
428	4.926	.235/.237	.106/.110	.000/.008	22
429	5.051	.235/.237	.106/.110	.000/.008	22
430	5.176	.235/.237	.106/.110	.000/.008	22
431	5.301	.235/.237	.106/.110	.000/.008	22
432	5.426	.235/.237	.106/.110	.000/.008	22
433	5.551	.235/.237	.106/.110	.000/.008	22
434	5.676	.235/.237	.106/.110	.000/.008	22
435	5.801	.235/.237	.106/.110	.000/.008	22
436	5.926	.235/.237	.106/.110	.000/.008	22
437	6.051	.235/.237	.106/.110	.000/.008	22
438	6.274	.235/.237	.106/.110	.000/.008	22
439	6.524	.235/.237	.106/.110	.000/.008	22
440	6.774	.235/.237	.106/.110	.000/.008	22
441	7.024	.235/.237	.106/.110	.000/.008	22
442	7.274	.235/.237	.106/.110	.000/.008	22

NOTE: Measure Split Gap using a Mandrel with "A" Diameter.

Dash Number MS28774	Seal Dimensions				
	A Inside Diameter	B Radial Cross- Section	C Width	D Split Gap	E Split Angle Degree
	+0.001/ -0.001				
443	7.524	.235/.237	.106/.110	.000/.008	22
444	7.774	.235/.237	.106/.110	.000/.008	22
445	8.024	.235/.237	.106/.110	.000/.008	22
446	8.524	.235/.237	.106/.110	.000/.008	22
447	9.024	.235/.237	.106/.110	.000/.008	22
448	9.524	.235/.237	.106/.110	.000/.008	22
449	10.024	.235/.237	.106/.110	.000/.008	22
450	10.524	.235/.237	.106/.110	.000/.008	22
451	11.024	.235/.237	.106/.110	.000/.008	22
452	11.524	.235/.237	.106/.110	.000/.008	22
453	12.024	.235/.237	.106/.110	.000/.008	22
454	12.524	.235/.237	.106/.110	.000/.008	22
455	13.024	.235/.237	.106/.110	.000/.008	22
456	13.524	.235/.237	.106/.110	.000/.008	22
457	14.024	.235/.237	.106/.110	.000/.008	22
458	14.524	.235/.237	.106/.110	.000/.008	22
459	15.024	.235/.237	.106/.110	.000/.008	22
460	15.524	.235/.237	.106/.110	.000/.008	22

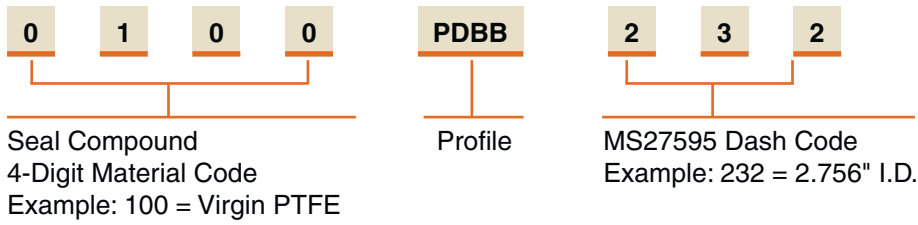
NOTE: Measure Split Gap using a Mandrel with "A" Diameter.

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

**PDB Profile**

**Part Number Nomenclature — PDBB Profile**

Table 10-11. PDBB Profile — Inch



**Gland Dimensions — PDBB Profile**

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

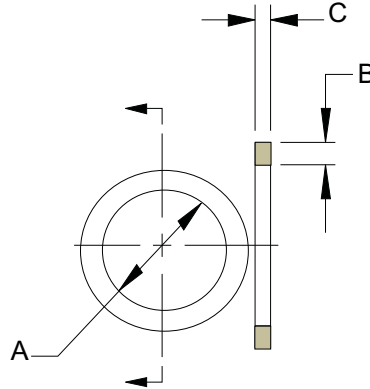


Table 10-12. PDBB Gland Dimensions — Inch

Dash Number MS27595	Seal Dimensions		
	A I.D.	B Radial Cross- Section	C Width
	+.001/ -.000		
004	0.080	.048/.052	.054/.056
005	0.111	.048/.052	.054/.056
006	0.125	.048/.052	.054/.056
007	0.156	.048/.052	.054/.056
008	0.187	.048/.052	.054/.056
009	0.219	.048/.052	.054/.056
010	0.250	.048/.052	.054/.056
011	0.312	.048/.052	.054/.056
012	0.375	.048/.052	.054/.056
013	0.440	.048/.052	.054/.056
014	0.503	.048/.052	.054/.056
015	0.565	.048/.052	.054/.056
016	0.628	.048/.052	.054/.056
017	0.690	.048/.052	.054/.056
018	0.753	.048/.052	.054/.056
019	0.815	.048/.052	.054/.056
020	0.881	.048/.052	.054/.056
	+.002/ -.002		
021	0.943	.048/.052	.054/.056
022	1.006	.048/.052	.054/.056
023	1.068	.048/.052	.054/.056
024	1.131	.048/.052	.054/.056
025	1.193	.048/.052	.054/.056

Dash Number MS27595	Seal Dimensions		
	A I.D.	B Radial Cross- Section	C Width
	+.002/ -.002		
026	1.256	.048/.052	.054/.056
027	1.318	.048/.052	.054/.056
028	1.381	.048/.052	.054/.056
	+.001/ -.002		
110	0.374	.048/.052	.087/.089
111	0.437	.048/.052	.087/.089
112	0.499	.048/.052	.087/.089
113	0.562	.048/.052	.087/.089
114	0.624	.048/.052	.087/.089
115	0.687	.048/.052	.087/.089
116	0.749	.048/.052	.087/.089
117	0.815	.048/.052	.087/.089
118	0.877	.048/.052	.087/.089
119	0.940	.048/.052	.087/.089
120	1.002	.048/.052	.087/.089
	+.002/ -.002		
121	1.065	.048/.052	.087/.089
122	1.127	.048/.052	.087/.089
123	1.190	.048/.052	.087/.089
124	1.252	.048/.052	.087/.089
125	1.315	.048/.052	.087/.089
126	1.377	.048/.052	.087/.089

Dash Number MS27595	Seal Dimensions		
	A I.D.	B Radial Cross- Section	C Width
	+.002/ -.002		
127	1.440	.048/.052	.087/.089
128	1.502	.048/.052	.087/.089
129	1.565	.048/.052	.087/.089
130	1.629	.048/.052	.087/.089
131	1.691	.048/.052	.087/.089
132	1.754	.048/.052	.087/.089
133	1.816	.048/.052	.087/.089
134	1.879	.048/.052	.087/.089
135	1.942	.048/.052	.087/.089
136	2.004	.048/.052	.087/.089
137	2.067	.048/.052	.087/.089
138	2.129	.048/.052	.087/.089
139	2.192	.048/.052	.087/.089
140	2.254	.048/.052	.087/.089
141	2.317	.048/.052	.087/.089
142	2.379	.048/.052	.087/.089
143	2.442	.048/.052	.087/.089
144	2.504	.048/.052	.087/.089
145	2.567	.048/.052	.087/.089
146	2.629	.048/.052	.087/.089
147	2.692	.048/.052	.087/.089
148	2.754	.048/.052	.087/.089
149	2.817	.048/.052	.087/.089

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Table 10-12. PDBB Gland Dimensions — Inch (Continued)

Dash Number MS27595	Seal Dimensions			Dash Number MS27595	Seal Dimensions			Dash Number MS27595	Seal Dimensions		
	A I.D.	B Radial Cross- Section	C Width		A I.D.	B Radial Cross- Section	C Width		A I.D.	B Radial Cross- Section	C Width
	+0.01/ -0.02				+0.01/ -0.02				+0.02/ -0.00		
210	0.753	.048/.052	.118/.120	246	4.505	.048/.052	.118/.120	432	5.377	.106/.110	.235/.237
211	0.815	.048/.052	.118/.120	247	4.630	.048/.052	.118/.120	433	5.502	.106/.110	.235/.237
212	0.878	.048/.052	.118/.120	325	1.497	.071/.075	.184/.186	434	5.627	.106/.110	.235/.237
213	0.940	.048/.052	.118/.120	326	1.622	.071/.075	.184/.186	435	5.752	.106/.110	.235/.237
214	1.003	.048/.052	.118/.120	327	1.748	.071/.075	.184/.186	436	5.877	.106/.110	.235/.237
215	1.065	.048/.052	.118/.120	328	1.873	.071/.075	.184/.186	437	6.002	.106/.110	.235/.237
216	1.128	.048/.052	.118/.120	329	1.998	.071/.075	.184/.186	438	6.252	.106/.110	.235/.237
217	1.190	.048/.052	.118/.120	330	2.123	.071/.075	.184/.186	439	6.502	.106/.110	.235/.237
218	1.253	.048/.052	.118/.120	331	2.248	.071/.075	.184/.186	440	6.752	.106/.110	.235/.237
219	1.315	.048/.052	.118/.120	332	2.373	.071/.075	.184/.186	441	7.002	.106/.110	.235/.237
220	1.378	.048/.052	.118/.120	333	2.498	.071/.075	.184/.186	442	7.252	.106/.110	.235/.237
221	1.440	.048/.052	.118/.120	334	2.623	.071/.075	.184/.186	443	7.502	.106/.110	.235/.237
222	1.503	.048/.052	.118/.120	335	2.748	.071/.075	.184/.186	444	7.752	.106/.110	.235/.237
223	1.629	.048/.052	.118/.120	336	2.873	.071/.075	.184/.186	445	8.002	.106/.110	.235/.237
224	1.754	.048/.052	.118/.120	337	2.998	.071/.075	.184/.186		+0.03/ -0.03		
225	1.880	.048/.052	.118/.120	338	3.123	.071/.075	.184/.186	446	8.502	.106/.110	.235/.237
226	2.005	.048/.052	.118/.120	339	3.248	.071/.075	.184/.186	447	9.002	.106/.110	.235/.237
227	2.130	.048/.052	.118/.120	340	3.373	.071/.075	.184/.186	448	9.502	.106/.110	.235/.237
228	2.255	.048/.052	.118/.120	341	3.498	.071/.075	.184/.186	449	10.002	.106/.110	.235/.237
229	2.380	.048/.052	.118/.120	342	3.623	.071/.075	.184/.186	450	10.502	.106/.110	.235/.237
230	2.505	.048/.052	.118/.120	343	3.748	.071/.075	.184/.186		+0.04/ -0.04		
231	2.630	.048/.052	.118/.120	344	3.873	.071/.075	.184/.186	451	11.002	.106/.110	.235/.237
232	2.755	.048/.052	.118/.120	345	3.998	.071/.075	.184/.186	452	11.502	.106/.110	.235/.237
233	2.880	.048/.052	.118/.120	346	4.123	.071/.075	.184/.186	453	12.002	.106/.110	.235/.237
234	3.005	.048/.052	.118/.120	347	4.248	.071/.075	.184/.186	454	12.502	.106/.110	.235/.237
235	3.130	.048/.052	.118/.120	348	4.373	.071/.075	.184/.186	455	13.002	.106/.110	.235/.237
236	3.255	.048/.052	.118/.120	349	4.498	.071/.075	.184/.186		+0.05/ -0.05		
237	3.380	.048/.052	.118/.120		+0.02/ -0.00			456	13.502	.106/.110	.235/.237
238	3.505	.048/.052	.118/.120	425	4.502	.106/.110	.235/.237	457	14.002	.106/.110	.235/.237
239	3.630	.048/.052	.118/.120	426	4.627	.106/.110	.235/.237	458	14.502	.106/.110	.235/.237
240	3.755	.048/.052	.118/.120	427	4.752	.106/.110	.235/.237	459	15.002	.106/.110	.235/.237
241	3.880	.048/.052	.118/.120	428	4.877	.106/.110	.235/.237	460	15.502	.106/.110	.235/.237
242	4.005	.048/.052	.118/.120	429	5.002	.106/.110	.235/.237				
243	4.130	.048/.052	.118/.120	430	5.127	.106/.110	.235/.237				
244	4.255	.048/.052	.118/.120	431	5.252	.106/.110	.235/.237				
245	4.380	.048/.052	.118/.120								

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

