

Symmetrical Seals for Rod or Piston Applications

Catalog EPS 5370/USA

Contents

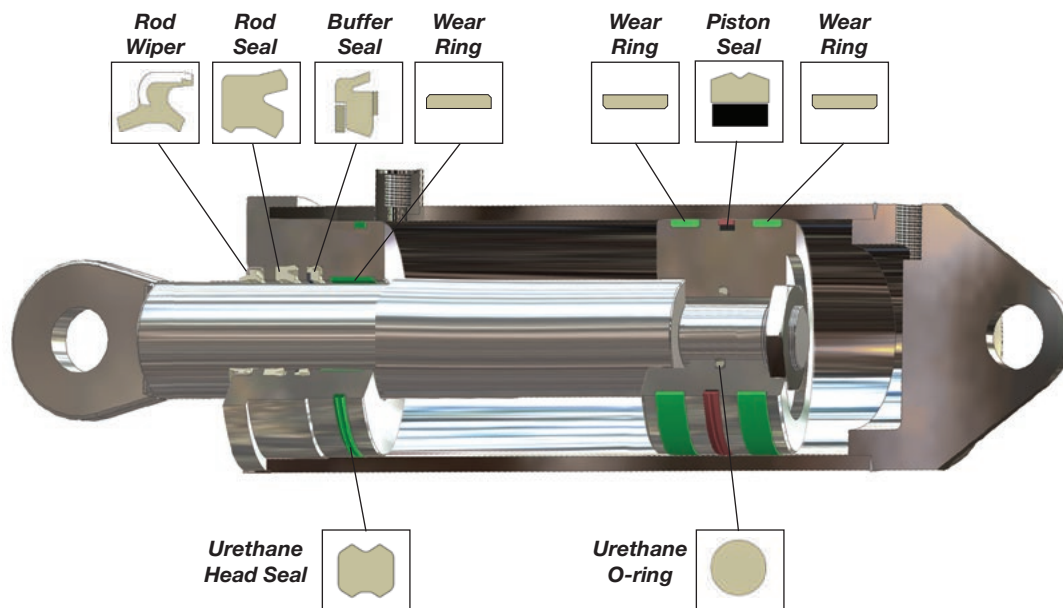
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Symmetrical Profiles

Parker symmetrical profiles are designed to fit the center of the gland. They are categorized as symmetrical profiles because the shape of the outside diameter sealing lip matches the shape of the inside diameter sealing lip. This symmetrical design, with its centered fit in the gland, allows the profile to function either as a rod or piston seal. Parker's wide range of profile options, proprietary compounds, and sizes establish Parker as a leader in the industry, providing quality solutions for pneumatic and hydraulic applications.

6

Typical Hydraulic Cylinder



06/01/2014

Symmetrical Seal

Product Offering (For Rod or Piston Applications)

Catalog EPS 5370/USA

Profiles

Table 6-1: Product Profiles

Series	Description	Application (Duty)				Page
		Light	Medium	Heavy	Pneumatic	
SPP	Square Cross-Section O-ring Energized Lip Seal					6-6
DPP	O-ring Loaded Lip Seal with Straight Cut, Scraper Lip Design					6-10
BPP	O-ring Energized Lip Seal with Beveled Lip Design					6-14
SL	Dual Compound Dual Lip Seal					6-24
US	Symmetrical U-cup Seal					6-27

Series	Description	Application (Duty)				Page
		Light	Medium	Heavy	Pneumatic	
8400	Light Load U-cup with Beveled Lips					6-18
8500	Light Load U-cup with Straight Cut, Scraper Lips					6-18
AN6226	Symmetrical U-cup per Army/Navy (AN) Specification					6-30

Symmetrical Seal

Decision Tree

The Symmetrical product offerings are a part of the Decision Trees in the Rod and Piston sections ([Sections 5 and 7](#)). These Decision Trees are found on [pages 5-3, 5-4, 7-3 and 7-4](#).

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Symmetrical Seals

PolyPak® Sealing

Catalog EPS 5370/USA



PolyPak® Sealing

Parker's PolyPak® seal is a patented precision molded multi-purpose seal. The Parker PolyPak combines an o-ring type synthetic rubber o-spring with a conventional lip-type seal to produce a unique sealing device capable of sealing both vacuum, high and low pressure.

Conventional lip seals, such as the standard u-cups are prone to leakage under low pressure because little or no lip loading is inherent in the basic seal design. The Parker PolyPak however, is a squeeze type seal and provides high sealability at low pressure. As system pressure increases, additional force is applied to the PolyPak's seal interface and as pressure continues to increase, lip loading is automatically increased to compensate for this higher pressure and thus maintain a positive, leak-free seal from hard vacuum to over 60,000 psi with proper design and auxiliary devices.

In addition to providing superior sealing in vacuum, low and high pressure applications, the PolyPak seal offers a number of distinct advantages over conventional symmetrical or non-symmetrical u-cup seals including:

- The PolyPak seal's o-spring energizer stabilizes the seal under extreme pressures, preventing seal lip distortion and rolling or twisting in the gland.
- At low or high temperature extremes, the o-spring maintains lip loading on both I.D. and O.D. of the seal interface.
- The PolyPak seal can be stretched or squeezed to accommodate oversize cylinder bores and undersize rods. As long as the seal cross-section is correct in relation to the radial groove dimensions, the PolyPak will compensate and maintain proper lip loading.
- The range of materials available to the user of the PolyPak seal insures the proper combination for abrasion, extrusion, temperature resistance and fluid compatability which produces high sealability and long life.

PolyPak seals are available in three styles:

1. Standard PolyPak (SPP Profile)
2. Deep PolyPak (DPP Profile)
3. Type B PolyPak (BPP Profile)

Rod Sealing with PolyPak® Seals

As a general rule, rod seals are more critical in nature than their companion piston seals. With increasing OEM requirements for “dry rod” capability, both to conserve system fluid and avoid leakage, the design and selection of the rod seal can be more challenging than its piston counterpart.

Parker recommends the use of the Type B PolyPak (BPP Profile) for rod seal applications due to its design features, including:

- Excellent film-breaking capability of the beveled lip design
- The higher level of lip loading provided by the Type B offers maximum sealability
- The long body of the design provides maximum stability

Piston Sealing with PolyPak Seals

Piston seals can be classified in two categories: single-acting and double-acting. The single acting seal is only required to seal in a single direction as system pressure is seen on only one end of the piston (return of the piston in a single-acting system is accomplished either by gravity or spring loading). The double-acting cylinder requires that the piston be sealed in both directions of stroke as system fluid is applied to one side or the other to achieve movement.

Please see the individual PolyPak profile pages for explanation and differentiation on selecting PolyPak profiles for piston applications.

PolyPak Material Combinations

PolyPak seals can be configured in numerous o-spring energizer and shell combinations. Table 6-2 represents “standard” combinations. Care should be taken to insure that both the PolyPak shell and its companion o-spring energizer are compatible with the system temperature, pressure, and fluid requirements.

Table 6-2. Standard Shell and O-Spring Energizer Combinations for PolyPak Seals

PolyPak Shell	O-Spring Energizer
Molythane®	70A Nitrile
Polymyte®	70A Nitrile, 75A FKM
Nitroxile®	70A Nitrile
Ethylene Propylene	80A EPR
Fluorocarbon	75A FKM
All Plastic and Rubber	Metal O-spring

Parker’s “smart” part numbering provides for varying standard and custom PolyPak shell and o-spring energizer material combinations. Please refer to the part number nomenclature tables and Technical Data in the PolyPak profile pages for PolyPak shell material options. See [Table 6-3](#) for standard and custom o-spring energizer option details.

Positively-Actuated Back-ups Option

PolyPak seals can be designed with positively-actuated back-ups by designating that option in the part number. See [page 10-16](#) for an explanation of the features of positively-actuated back-ups.

Table 6-3. PolyPak® O-Spring Energizers

Standard O-Spring Energizer		
O-Spring Energizer Code	Type of PolyPak	Description
– (dash)	Urethane (4615, 4622)	70A NBR o-spring energizer
	Rubber	Indicates that the o-spring material family is to match the rubber PolyPak shell material family. Example: XNBR 4263 PolyPak shell: code (“–”) indicates NBR o-ring EPR 4207 PolyPak shell: code (“–”) indicates EPR o-ring FKM 4208 PolyPak shell: code (“–”) indicates FKM o-ring FKM 4266 PolyPak shell: code (“–”) indicates FKM o-ring
	Polymyte® (4651)	Must be replaced by a custom o-spring energizer code
Custom O-Spring Energizers		
O-Spring Energizer Code	Energizer Description	
C	Continuous o-ring	
E	General EPR o-ring	
J	General HNBR o-ring	
L	Canted coil, spring-loaded with oval spring cavity	
N	General nitrile o-ring	
R	Low swell nitrile o-ring	
S	Spring energizer with o-ring groove	
U	Geothermal EPR o-ring	
V	Fluorocarbon o-ring	
W	Nuclear grade EPR o-ring	
X	Premium grade low-temperature o-ring	
Y	Low temperature nitrile o-ring	

Symmetrical Seal SPP Profile, Standard PolyPak®

Catalog EPS 5370/USA

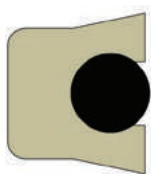
SPP Profile, Standard PolyPak® Square Cross-Section O-ring Energized Lip Seal



Parker's Standard PolyPak is a squeeze seal with a symmetrical profile for use in either rod or piston applications. The standard Molythane® shell provides high wear resistance and the o-ring energizer functions as a spring to maintain sealing contact under low pressure. The Standard PolyPak utilizes a straight cut scraper lip design formed by a precision trimming process. The scraper edge wipes both fluid film and contamination away from the seal. A wide selection of sizes and alternate compounds allow this profile to match up with many hydraulic applications. The Standard PolyPak is an economical choice as a stand alone rod or piston seal. With less squeeze force than the Deep or Type B profiles, the Standard PolyPak can be installed back-to-back, in separate glands, for bi-directional sealing. To protect against pressure trapping, it is recommended that the o-ring be removed from the Standard PolyPak facing the lower pressure side of the application.

Technical Data

Standard Materials*	Temperature Range	Pressure Range†	Surface Speed
Shell			
P4615A90	-65°F to +200°F (-54°C to +93°C)	5000 psi (345 bar)	< 1.6 ft/s (0.5 m/s)
P4622A90	-65°F to +225°F (-54°C to +107°C)	5000 psi (345 bar)	< 1.6 ft/s (0.5 m/s)
Z4651D60	-65°F to +275°F (-54°C to +135°C)	7000 psi (482 bar)	< 1.6 ft/s (0.5 m/s)
N4263A90	-20°F to +275°F (-29°C to +135°C)	2000 psi (138 bar)	< 1.6 ft/s (0.5 m/s)
E4207A90	-65°F to +300°F (-54°C to +149°C)	2000 psi (138 bar)	< 1.6 ft/s (0.5 m/s)
V4208A90	-5°F to +400°F (-21°C to +204°C)	2000 psi (138 bar)	< 1.6 ft/s (0.5 m/s)
V4266A95	-5°F to +400°F (-21°F to +204°C)	2250 psi (155 bar)	< 1.6 ft/s (0.5 m/s)



Standard PolyPak Cross-Section

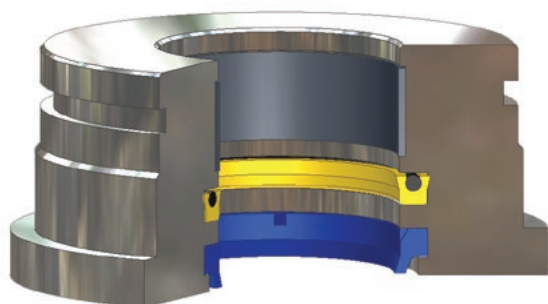
Energizer

For Seals With...	Standard Energizer Material*
4615 or 4622 PolyPak shell	Standard energizer is a nitrile o-ring
4651 PolyPak shell	O-spring energizer code must be identified
Rubber PolyPak shell	Standard energizer is an o-ring from the same rubber material family as the shell

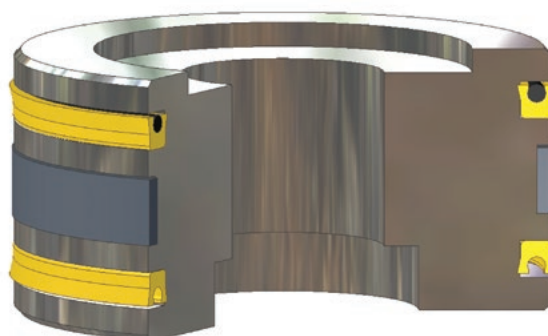
***Alternate Materials:** For custom energizer materials, see [Table 6-3 on page 6-5](#). For applications that may require an alternate shell material, please see [Section 3](#) or contact your local Parker representative.

†Pressure Range without wear rings. If used with wear rings, see [Table 2-4, page 2-5](#).

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*Standard PolyPak installed
in Rod Gland*



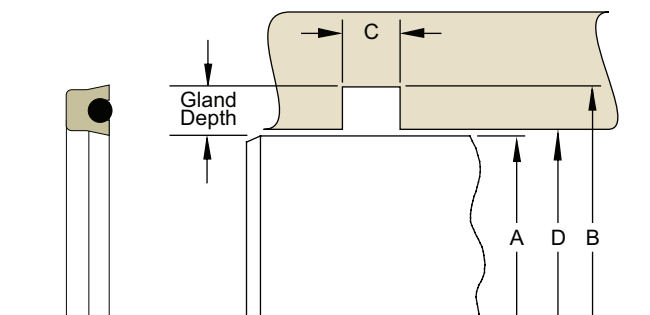
*Standard PolyPak installed
in Piston Gland*

Part Number Nomenclature — SPP Profile, Standard PolyPak®

Table 6-4. SPP Profile, Standard PolyPak

4	6	1	5	2	5	0	0	2	5	0	0	
4 Digit Material Code Example: 4615 = 90A Molythane®				Gland Depth (x1000) or Seal Nominal Radial Cross-Section Example: .250 x 1000 = 250			Seal Nominal I.D. (x1000) Example: 2.500 x 1000 = 02500				Energizer Material Code Omit = Standard (For custom energizer options, see Table 6-3 on page 6-5).	

Rod Gland Dimensions — SPP Profile, Standard PolyPak®



Please refer to Engineering [Section 2](#), [page 2-8](#) for surface finish and additional hardware considerations.

Table 6-5. SPP Profile — Rod Gland Calculation, Rubber and Polyurethane (90A)

A Rod Diameter		Seal		B Groove Diameter		C Groove Width	D Throat Diameter*	
Range	Tol.	Cross Section	Axial Width	Calculation	Tol.	+0.015/ -.000	Calculation	Tol.
0.062 - 0.624	+0.000/-0.001	1/8 (.125)	1/8 (.125)	Dia. A + .250	+0.002/-0.000	0.138	Dia. A + .001	+0.002/-0.000
0.625 - 0.999	+0.000/-0.001	1/8 (.125)	1/8 (.125)	Dia. A + .250	+0.002/-0.000	0.138	Dia. A + .001	+0.002/-0.000
1.000 - 1.499	+0.000/-0.002	3/16 (.187)	3/16 (.187)	Dia. A + .375	+0.002/-0.000	0.206	Dia. A + .001	+0.002/-0.000
1.500 - 1.999	+0.000/-0.002	3/16 (.187)	3/16 (.187)	Dia. A + .375	+0.002/-0.000	0.206	Dia. A + .001	+0.002/-0.000
2.000 - 3.499	+0.000/-0.002	1/4 (.250)	1/4 (.250)	Dia. A + .500	+0.003/-0.000	0.275	Dia. A + .001	+0.003/-0.000
3.500 - 4.999	+0.000/-0.002	5/16 (.312)	5/16 (.312)	Dia. A + .625	+0.004/-0.000	0.343	Dia. A + .002	+0.003/-0.000
5.000 - 9.999	+0.000/-0.002	3/8 (.375)	3/8 (.375)	Dia. A + .750	+0.005/-0.000	0.413	Dia. A + .002	+0.004/-0.000
10.000 - 19.999	+0.000/-0.003	1/2 (.500)	1/2 (.500)	Dia. A + 1.000	+0.007/-0.000	0.550	Dia. A + .002	+0.005/-0.000
20.000 - 29.999	+0.000/-0.003	5/8 (.625)	5/8 (.625)	Dia. A + 1.250	+0.009/-0.000	0.688	Dia. A + .002	+0.006/-0.000
30.000 - 39.999	+0.000/-0.004	3/4 (.750)	3/4 (.750)	Dia. A + 1.500	+0.011/-0.000	0.825	Dia. A + .002	+0.007/-0.000
40.000 +	+0.000/-0.005	1 (1.000)	1 (1.000)	Dia. A + 2.000	+0.015/-0.000	1.100	Dia. A + .002	+0.009/-0.000

Table 6-6. SPP Profile — Rod Gland Calculation, Polymyte (60D)

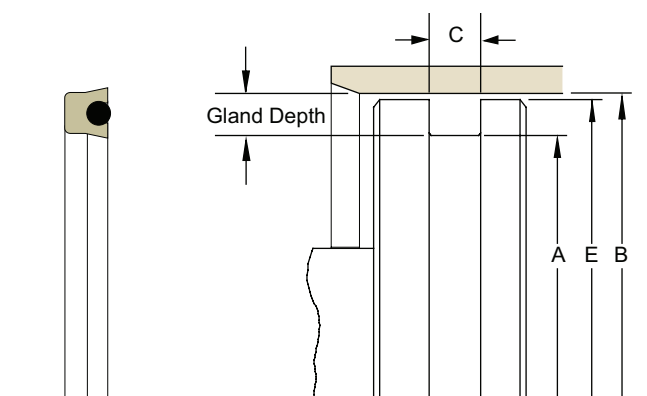
A Rod Diameter		Seal		A Groove Diameter		C Groove Width	D Throat Diameter*	
Range	Tol.	Cross Section	Axial Width	Calculation	Tol.	+0.015/ -.000	Calculation	Tol.
0.062 - 0.999	+0.000/-0.001	1/8 (.125)	1/8 (.125)	Dia. A + .250	+0.002/-0.000	0.138	Dia. A + .001	+0.002/-0.000
1.000 - 1.749	+0.000/-0.001	1/8 (.125)	1/8 (.125)	Dia. A + .250	+0.002/-0.000	0.138	Dia. A + .001	+0.002/-0.000
1.750 - 2.249	+0.000/-0.002	3/16 (.187)	3/16 (.187)	Dia. A + .375	+0.002/-0.000	0.206	Dia. A + .001	+0.002/-0.000
2.250 - 2.749	+0.000/-0.002	3/16 (.187)	3/16 (.187)	Dia. A + .375	+0.002/-0.000	0.206	Dia. A + .001	+0.002/-0.000
2.750 - 3.499	+0.000/-0.002	1/4 (.250)	1/4 (.250)	Dia. A + .500	+0.003/-0.000	0.275	Dia. A + .001	+0.003/-0.000
3.500 - 4.999	+0.000/-0.002	5/16 (.312)	5/16 (.312)	Dia. A + .625	+0.004/-0.000	0.343	Dia. A + .002	+0.003/-0.000
5.000 - 9.999	+0.000/-0.002	3/8 (.375)	3/8 (.375)	Dia. A + .750	+0.005/-0.000	0.413	Dia. A + .002	+0.004/-0.000
10.000 - 19.999	+0.000/-0.003	1/2 (.500)	1/2 (.500)	Dia. A + 1.000	+0.007/-0.000	0.550	Dia. A + .002	+0.005/-0.000
20.000 - 29.999	+0.000/-0.003	5/8 (.625)	5/8 (.625)	Dia. A + 1.250	+0.009/-0.000	0.688	Dia. A + .002	+0.006/-0.000
30.000 - 39.999	+0.000/-0.004	3/4 (.750)	3/4 (.750)	Dia. A + 1.500	+0.011/-0.000	0.825	Dia. A + .002	+0.007/-0.000
40.000 +	+0.000/-0.005	1 (1.000)	1 (1.000)	Dia. A + 2.000	+0.015/-0.000	1.100	Dia. A + .002	+0.009/-0.000

* If used with wear rings, refer to wear ring throat diameter, see [Section 9](#).

Above table reflects recommended cross-sections for rod diameters shown. Alternate cross-sections and additional sizes may be considered. Consult www.parker.com/eps/FluidPower for additional cross-sections and sizes, hardware specifications, and part number availability. Contact your Parker representative for assistance.

06/01/2014

Piston Gland Dimensions — SPP Profile, Standard PolyPak®



Please refer to Engineering [Section 2](#), [page 2-8](#) for surface finish and additional hardware considerations.

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Table 6-7. SPP Profile — Piston Gland Calculation, Rubber and Polyurethane (90A)

B Bore Diameter		Seal		A Groove Diameter		C Groove Width	E Piston Diameter*	
Range	Tol.	Cross Section	Axial Width	Calculation	Tol.	+0.015/ -.000	Calculation	Tol.
0.312 - 1.499	+.002/-.000	1/8 (.125)	1/8 (.125)	Dia. B - .250	+.000/-.002	0.138	Dia. B - .001	+.000/-.001
1.500 - 2.999	+.002/-.000	3/16 (.187)	3/16 (.187)	Dia. B - .375	+.000/-.002	0.206	Dia. B - .001	+.000/-.002
3.000 - 5.999	+.003/-.000	1/4 (.250)	1/4 (.250)	Dia. B - .500	+.000/-.003	0.275	Dia. B - .001	+.000/-.002
6.000 - 9.999	+.003/-.000	5/16 (.312)	5/16 (.312)	Dia. B - .625	+.000/-.004	0.343	Dia. B - .002	+.000/-.002
10.000 - 19.999	+.004/-.000	3/8 (.375)	3/8 (.375)	Dia. B - .750	+.000/-.005	0.413	Dia. B - .002	+.000/-.002
20.000 - 29.999	+.005/-.000	1/2 (.500)	1/2 (.500)	Dia. B - 1.000	+.000/-.007	0.550	Dia. B - .002	+.000/-.003
30.000 - 39.999	+.006/-.000	5/8 (.625)	5/8 (.625)	Dia. B - 1.250	+.000/-.009	0.688	Dia. B - .002	+.000/-.003
40.000 - 49.999	+.007/-.000	3/4 (.750)	3/4 (.750)	Dia. B - 1.500	+.000/-.010	0.825	Dia. B - .002	+.000/-.004
50.000 +	+.009/-.000	1 (1.000)	1 (1.000)	Dia. B - 2.000	+.000/-.012	1.100	Dia. B - .002	+.000/-.005

Table 6-8. SPP Profile — Piston Gland Calculation, Polymyte (60D)

B Bore Diameter		Seal		A Groove Diameter		C Groove Width	E Piston Diameter*	
Range	Tol.	Cross Section	Axial Width	Calculation	Tol.	+0.015/ -.000	Calculation	Tol.
0.312 - 2.749	+.002/-.000	1/8 (.125)	1/8 (.125)	Dia. B - .250	+.000/-.002	0.138	Dia. B - .001	+.000/-.001
2.750 - 4.499	+.002/-.000	3/16 (.187)	3/16 (.187)	Dia. B - .375	+.000/-.002	0.206	Dia. B - .001	+.000/-.002
4.500 - 5.999	+.003/-.000	1/4 (.250)	1/4 (.250)	Dia. B - .500	+.000/-.003	0.275	Dia. B - .001	+.000/-.002
6.000 - 9.999	+.003/-.000	5/16 (.312)	5/16 (.312)	Dia. B - .625	+.000/-.004	0.343	Dia. B - .002	+.000/-.002
10.000 - 19.999	+.004/-.000	3/8 (.375)	3/8 (.375)	Dia. B - .750	+.000/-.005	0.413	Dia. B - .002	+.000/-.002
20.000 - 29.999	+.005/-.000	1/2 (.500)	1/2 (.500)	Dia. B - 1.000	+.000/-.007	0.550	Dia. B - .002	+.000/-.003
30.000 - 39.999	+.006/-.000	5/8 (.625)	5/8 (.625)	Dia. B - 1.250	+.000/-.009	0.688	Dia. B - .002	+.000/-.003
40.000 - 49.999	+.007/-.000	3/4 (.750)	3/4 (.750)	Dia. B - 1.500	+.000/-.010	0.825	Dia. B - .002	+.000/-.004
50.000 +	+.009/-.000	1 (1.000)	1 (1.000)	Dia. B - 2.000	+.000/-.012	1.100	Dia. B - .002	+.000/-.005

* If used with wear rings, refer to wear ring piston diameter, see [Section 9](#).

Above table reflects recommended cross-sections for bore diameters shown. Alternate cross-sections and additional sizes may be considered. Consult www.parker.com/eps/FluidPower for additional cross-sections and sizes, hardware specifications, and part number availability. Contact your Parker representative for assistance.

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Symmetrical Seal DPP Profile, Deep PolyPak®

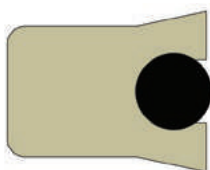
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DPP Profile, Deep PolyPak®, O-ring Loaded Lip Seal with Scraper Lip Design



Parker's Deep PolyPak is a squeeze seal with a symmetrical profile for use in either rod or piston applications. Its rectangular shape ensures stability in the gland. The standard Molythane® shell provides high wear resistance and the o-ring energizer functions as a spring to maintain sealing contact under low pressure or vacuum applications. The Deep PolyPak straight cut scraper lip design cuts fluid film and moves contamination away from the seal. The sharp edge of the lip is formed by a precision knife trimming process. A wide selection of sizes and alternate compounds allow this profile to match up with many hydraulic applications. The Deep PolyPak is an economical choice as a stand alone rod or piston seal. Dual Deep PolyPak seals should not be installed back to back in bi-directional piston applications as a pressure trap between the seals may occur.

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Deep PolyPak Cross-Section

Technical Data

Standard Materials*	Temperature Range	Pressure Range†	Surface Speed
Shell			
P4615A90	-65°F to +200°F (-54°C to +93°C)	5,000 psi (344 bar)	< 1.6 ft/s (0.5 m/s)
P4622A90	-65°F to +225°F (-54°C to +107°C)	5,000 psi (344 bar)	< 1.6 ft/s (0.5 m/s)
Z4651D60	-65°F to +275°F (-54°C to +135°C)	7,000 psi (482 bar)	< 1.6 ft/s (0.5 m/s)
N4263A90	-20°F to +275°F (-29°C to +135°C)	2,000 psi (138 bar)	< 1.6 ft/s (0.5 m/s)
E4207A90	-65°F to +300°F (-54°C to +149°C)	2,000 psi (138 bar)	< 1.6 ft/s (0.5 m/s)
V4208A90	-5°F to +400°F (-21°C to +204°C)	2,000 psi (138 bar)	< 1.6 ft/s (0.5 m/s)
V4266A95	-5°F to +400°F (-21°C to +204°C)	2,250 psi (155 bar)	< 1.6 ft/s (0.5 m/s)

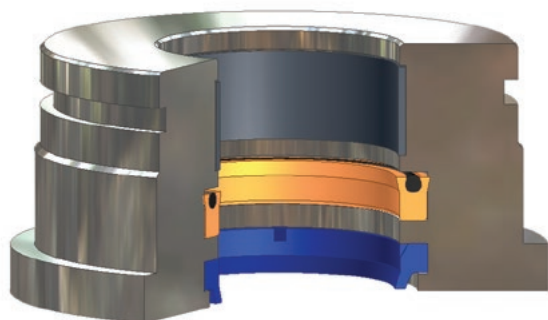
Energizer

For Seals With...	Standard Energizer Material*
4615 or 4622 PolyPak shell	Standard energizer is a nitrile o-ring
4651 PolyPak shell	O-spring energizer code must be identified
Rubber PolyPak shell	Standard energizer is an o-ring from the same rubber material family as the shell

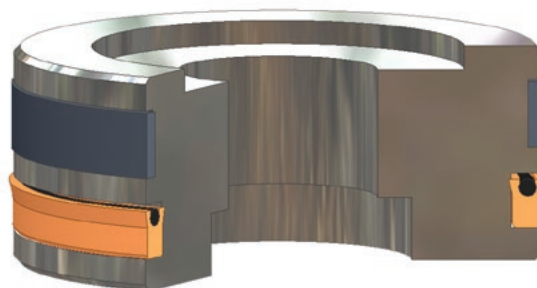
***Alternate Materials:** For custom energizer materials, see [Table 6-3 on page 6-5](#). For applications that may require an alternate shell material, please see [Section 3](#) or contact your local Parker Seal representative.

†Pressure Range without wear rings. If used with wear rings, see [Table 2-4, page 2-5](#).

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Deep PolyPak installed in Rod Gland



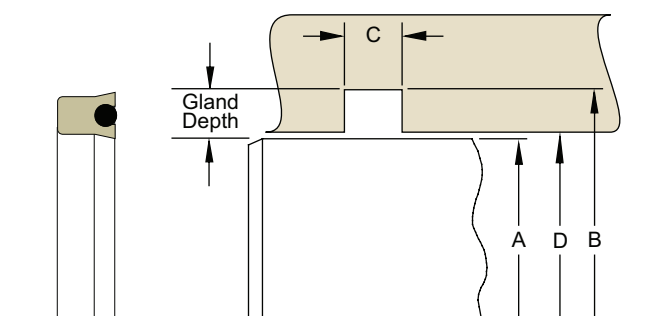
Deep PolyPak installed in Piston Gland

Part Number Nomenclature – DPP Profile, Deep PolyPak®

Table 6-9. DPP Profile, Deep PolyPak

4	6	1	5	2	5	0	0	2	0	0	0	-	3	7	5
4 Digit Material Code Example: 4615 = 90A Molythane®				Gland Depth (x1000) or Seal Nominal Radial Cross-Section Example: .250 x 1000 = 250			Seal Nominal I.D. (x1000) Example: 2.000 x 1000 = 02000						Seal Nominal Axial Width (x1000) Example: .375 x 1000 = 375		
												Energizer Material Code Example: - (Dash) = 70A Nitrile O-ring (For custom energizer options, see Table 6-3 on page 6-5.)			

Rod Gland Dimensions — DPP Profile, Deep PolyPak®



Please refer to Engineering [Section 2](#), [page 2-8](#) for surface finish and additional hardware considerations.

Table 6-10. DPP Profile — Rod Gland Calculation, Rubber and Polyurethane (90A)

A Rod Diameter		Seal		B Groove Diameter		C Groove Width	D Throat Diameter*	
Range	Tol.	Cross Section	Axial Width	Calculation	Tol.	+0.015/ -0.000	Calculation	Tol.
0.062 - 0.624	+0.000/-0.001	1/8 (.125)	3/16 (.187)	Dia. A + .250	+0.002/-0.000	0.206	Dia. A + .001	+0.002/-0.000
0.625 - 0.999	+0.000/-0.001	1/8 (.125)	1/4 (.250)	Dia. A + .250	+0.002/-0.000	0.275	Dia. A + .001	+0.002/-0.000
1.000 - 1.499	+0.000/-0.002	3/16 (.187)	5/16 (.312)	Dia. A + .375	+0.002/-0.000	0.343	Dia. A + .001	+0.002/-0.000
1.500 - 1.999	+0.000/-0.002	3/16 (.187)	3/8 (.375)	Dia. A + .375	+0.002/-0.000	0.413	Dia. A + .001	+0.002/-0.000
2.000 - 3.499	+0.000/-0.002	1/4 (.250)	3/8 (.375)	Dia. A + .500	+0.003/-0.000	0.413	Dia. A + .001	+0.003/-0.000
3.500 - 4.999	+0.000/-0.002	5/16 (.312)	1/2 (.500)	Dia. A + .625	+0.004/-0.000	0.550	Dia. A + .002	+0.003/-0.000
5.000 - 9.999	+0.000/-0.002	3/8 (.375)	5/8 (.625)	Dia. A + .750	+0.005/-0.000	0.688	Dia. A + .002	+0.004/-0.000
10.000 - 19.999	+0.000/-0.003	1/2 (.500)	3/4 (.750)	Dia. A + 1.000	+0.007/-0.000	0.825	Dia. A + .002	+0.005/-0.000
20.000 - 29.999	+0.000/-0.003	5/8 (.625)	1 (1.000)	Dia. A + 1.250	+0.009/-0.000	1.100	Dia. A + .002	+0.006/-0.000
30.000 - 39.999	+0.000/-0.004	3/4 (.750)	1-1/4 (1.250)	Dia. A + 1.500	+0.011/-0.000	1.375	Dia. A + .002	+0.007/-0.000
40.000 +	+0.000/-0.005	1 (1.000)	1-1/2 (1.500)	Dia. A + 2.000	+0.015/-0.000	1.650	Dia. A + .002	+0.009/-0.000

Table 6-11. DPP Profile — Rod Gland Calculation, Polymyte (60D)

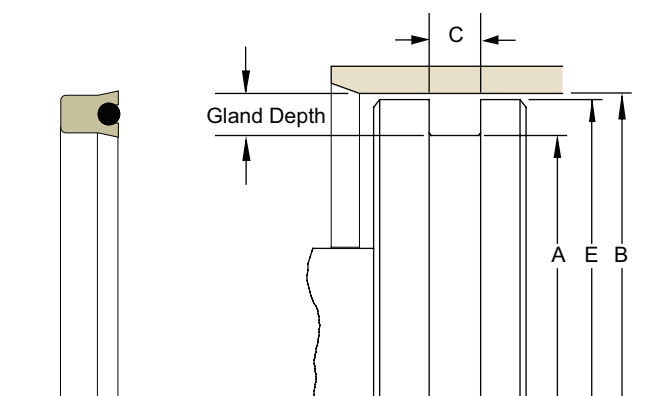
A Rod Diameter		Seal		B Groove Diameter		C Groove Width	D Throat Diameter*	
Range	Tol.	Cross Section	Axial Width	Calculation	Tol.	+0.015/ -0.000	Calculation	Tol.
0.062 - 0.999	+0.000/-0.001	1/8 (.125)	3/16 (.187)	Dia. A + .250	+0.002/-0.000	0.206	Dia. A + .001	+0.002/-0.000
1.000 - 1.749	+0.000/-0.001	1/8 (.125)	1/4 (.250)	Dia. A + .250	+0.002/-0.000	0.275	Dia. A + .001	+0.002/-0.000
1.750 - 2.249	+0.000/-0.002	3/16 (.187)	5/16 (.312)	Dia. A + .375	+0.002/-0.000	0.343	Dia. A + .001	+0.002/-0.000
2.250 - 2.749	+0.000/-0.002	3/16 (.187)	3/8 (.375)	Dia. A + .375	+0.002/-0.000	0.413	Dia. A + .001	+0.002/-0.000
2.750 - 3.499	+0.000/-0.002	1/4 (.250)	3/8 (.375)	Dia. A + .500	+0.003/-0.000	0.413	Dia. A + .001	+0.003/-0.000
3.500 - 4.999	+0.000/-0.002	5/16 (.312)	1/2 (.500)	Dia. A + .625	+0.004/-0.000	0.550	Dia. A + .002	+0.003/-0.000
5.000 - 9.999	+0.000/-0.002	3/8 (.375)	5/8 (.625)	Dia. A + .750	+0.005/-0.000	0.688	Dia. A + .002	+0.004/-0.000
10.000 - 19.999	+0.000/-0.003	1/2 (.500)	3/4 (.750)	Dia. A + 1.000	+0.007/-0.000	0.825	Dia. A + .002	+0.005/-0.000
20.000 - 29.999	+0.000/-0.003	5/8 (.625)	1 (1.000)	Dia. A + 1.250	+0.009/-0.000	1.100	Dia. A + .002	+0.006/-0.000
30.000 - 39.999	+0.000/-0.004	3/4 (.750)	1-1/4 (1.250)	Dia. A + 1.500	+0.011/-0.000	1.375	Dia. A + .002	+0.007/-0.000
40.000 +	+0.000/-0.005	1 (1.000)	1-1/2 (1.500)	Dia. A + 2.000	+0.015/-0.000	1.650	Dia. A + .002	+0.009/-0.000

* If used with wear rings, refer to wear ring throat diameter, see [Section 9](#).

Above table reflects recommended cross-sections for rod diameters shown. Alternate cross-sections and additional sizes may be considered. Consult www.parker.com/eps/FluidPower for additional cross-sections and sizes, hardware specifications, and part number availability. Contact your Parker representative for assistance.

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Piston Gland Dimensions — DPP Profile, Deep PolyPak®



Please refer to Engineering [Section 2](#),
[page 2-8](#) for surface finish and additional
hardware considerations.

Table 6-12. DPP Profile — Piston Gland Calculation, Rubber and Polyurethane (90A)

B Bore Diameter		Seal		A Groove Diameter		C Groove Width	E Piston Diameter*	
Range	Tol.	Cross Section	Axial Width	Calculation	Tol.	+0.015/ -.000	Calculation	Tol.
0.312 - 1.499	+0.002/-.000	1/8 (.125)	1/4 (.250)	Dia. B - .250	+0.000/-.002	0.275	Dia. B - .001	+0.000/-.001
1.500 - 2.999	+0.002/-.000	3/16 (.187)	5/16 (.312)	Dia. B - .375	+0.000/-.002	0.343	Dia. B - .001	+0.000/-.002
3.000 - 5.999	+0.003/-.000	1/4 (.250)	3/8 (.375)	Dia. B - .500	+0.000/-.003	0.413	Dia. B - .001	+0.000/-.002
6.000 - 9.999	+0.003/-.000	5/16 (.312)	1/2 (.500)	Dia. B - .625	+0.000/-.004	0.550	Dia. B - .002	+0.000/-.002
10.000 - 19.999	+0.004/-.000	3/8 (.375)	5/8 (.625)	Dia. B - .750	+0.000/-.005	0.688	Dia. B - .002	+0.000/-.002
20.000 - 29.999	+0.005/-.000	1/2 (.500)	3/4 (.750)	Dia. B - 1.000	+0.000/-.007	0.825	Dia. B - .002	+0.000/-.003
30.000 - 39.999	+0.006/-.000	5/8 (.625)	1 (1.000)	Dia. B - 1.250	+0.000/-.009	1.100	Dia. B - .002	+0.000/-.003
40.000 - 49.999	+0.007/-.000	3/4 (.750)	1-1/4 (1.250)	Dia. B - 1.500	+0.000/-.010	1.375	Dia. B - .002	+0.000/-.004
50.000 +	+0.009/-.000	1 (1.000)	1-1/2 (1.500)	Dia. B - 2.000	+0.000/-.012	1.650	Dia. B - .002	+0.000/-.005

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Table 6-13. DPP Profile — Piston Gland Calculation, Polymyte (60D)

B Bore Diameter		Seal		A Groove Diameter		C Groove Width	E Piston Diameter*	
Range	Tol.	Cross Section	Axial Width	Calculation	Tol.	+0.015/ -.000	Calculation	Tol.
0.312 - 2.749	+0.002/-.000	1/8 (.125)	1/4 (.250)	Dia. B - .250	+0.000/-.002	0.275	Dia. B - .001	+0.000/-.001
2.750 - 4.499	+0.002/-.000	3/16 (.187)	5/16 (.312)	Dia. B - .375	+0.000/-.002	0.343	Dia. B - .001	+0.000/-.002
4.500 - 5.999	+0.003/-.000	1/4 (.250)	3/8 (.375)	Dia. B - .500	+0.000/-.003	0.413	Dia. B - .001	+0.000/-.002
6.000 - 9.999	+0.003/-.000	5/16 (.312)	1/2 (.500)	Dia. B - .625	+0.000/-.004	0.550	Dia. B - .002	+0.000/-.002
10.000 - 19.999	+0.004/-.000	3/8 (.375)	5/8 (.625)	Dia. B - .750	+0.000/-.005	0.688	Dia. B - .002	+0.000/-.002
20.000 - 29.999	+0.005/-.000	1/2 (.500)	3/4 (.750)	Dia. B - 1.000	+0.000/-.007	0.825	Dia. B - .002	+0.000/-.003
30.000 - 39.999	+0.006/-.000	5/8 (.625)	1 (1.000)	Dia. B - 1.250	+0.000/-.009	1.100	Dia. B - .002	+0.000/-.003
40.000 - 49.999	+0.007/-.000	3/4 (.750)	1-1/4 (1.250)	Dia. B - 1.500	+0.000/-.010	1.375	Dia. B - .002	+0.000/-.004
50.000 +	+0.009/-.000	1 (1.000)	1-1/2 (1.500)	Dia. B - 2.000	+0.000/-.012	1.650	Dia. B - .002	+0.000/-.005

* If used with wear rings, refer to wear ring bore diameter, see [Section 9](#).

Above table reflects recommended cross-sections for piston diameters shown. Alternate cross-sections and additional sizes may be considered. Consult www.parker.com/eps/FluidPower for additional cross-sections and sizes, hardware specifications, and part number availability. Contact your Parker representative for assistance.

06/01/2014

Symmetrical Seal BPP Profile, Type B PolyPak®

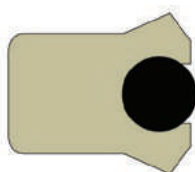
Catalog EPS 5370/USA

BPP Profile, Type B PolyPak® O-ring Energized Lip Seal with Beveled Lip Design



Parker's BPP profile, Type B PolyPak is a squeeze seal with a symmetrical profile for use in either rod or piston applications. The rectangular shape of its cross section ensures stability in the gland. The standard Molythane® shell provides high wear resistance and the o-ring energizer functions as a spring to maintain sealing contact under low pressure or vacuum applications. The beveled lip design of the seal is excellent for cutting fluid film and is formed by a precision knife trimming process. A wide selection of sizes and alternate compounds allow this profile to match up with many hydraulic applications. The Type B PolyPak is an economical choice as a stand-alone seal or can be used in tandem with a buffer seal. In piston applications, this seal will function as a unidirectional seal. Dual Type B PolyPak seals should not be installed back-to-back in bi-directional pressure applications, as a pressure trap between the seals may occur. Instead, for bi-directional piston sealing, incorporate a PIP Ring® (see [page 7-15](#)).

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Type B PolyPak
Cross-Section

Technical Data

Standard Materials*	Temperature Range	Pressure Range†	Surface Speed
Shell			
P4615A90	-65°F to +200°F (-54°C to +93°C)	5,000 psi (344 bar)	< 1.6 ft/s (0.5 m/s)
P4622A90	-65°F to +225°F (-54°C to +107°C)	5,000 psi (344 bar)	< 1.6 ft/s (0.5 m/s)
Z4651D60	-65°F to +275°F (-54°C to +135°C)	7,000 psi (482 bar)	< 1.6 ft/s (0.5 m/s)
N4263A90	-20°F to +275°F (-29°C to +135°C)	2,000 psi (138 bar)	< 1.6 ft/s (0.5 m/s)
E4207A90	-65°F to +300°F (-54°C to +149°C)	2,000 psi (138 bar)	< 1.6 ft/s (0.5 m/s)
V4208A90	-5°F to +400°F (-21°C to +204°C)	2,000 psi (138 bar)	< 1.6 ft/s (0.5 m/s)
V4266A95	-5°F to +400°F (-21°C to +204°C)	2,250 psi (155 bar)	< 1.6 ft/s (0.5 m/s)

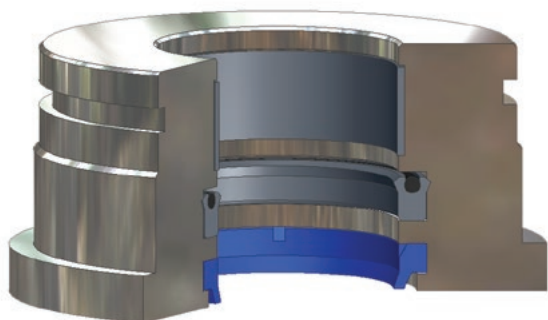
Energizer

For Seals With...	Standard Energizer Material*
4615 or 4622 PolyPak shell	Standard energizer is a nitrile o-ring
4651 PolyPak shell	O-spring energizer code must be identified
Rubber PolyPak shell	Standard energizer is an o-ring from the same rubber material family as the shell

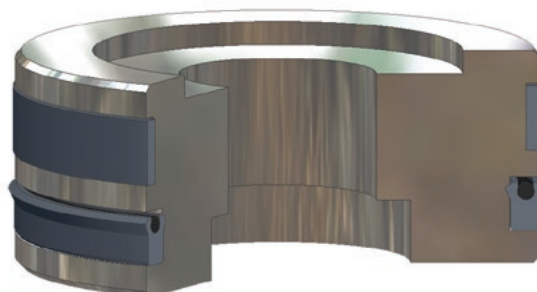
***Alternate Materials:** For custom energizer materials, see [Table 6-3 on page 6-5](#). For applications that may require an alternate shell material, please see [Section 3](#) or contact your local Parker seal representative.

†Pressure Range without wear rings. If used with wear rings, see [Table 2-4, page 2-5](#).

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Type B PolyPak installed in Rod Gland

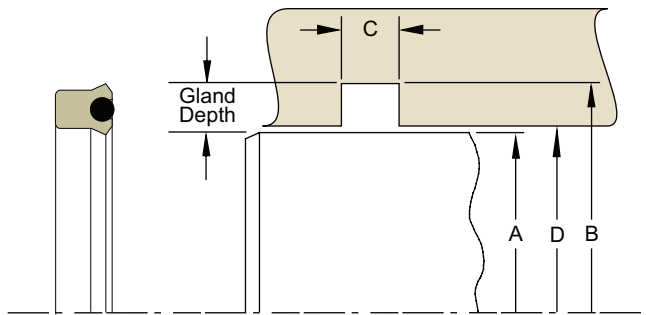


Type B PolyPak installed in Piston Gland

Part Number Nomenclature — BPP Profile, Type B PolyPak®

Table 6-14. BPP Profile

4	6	1	5	2	5	0	0	2	0	0	0	-	3	7	5	B
4 Digit Material Code Example: 4615 = 90A Molythane®				Gland Depth (x1000) or Seal Nominal Radial Cross-Section Example: .250 x 1000 = 250			Seal Nominal I.D. (x1000) Example: 2.000 x 1000 = 02000					Seal Nominal Axial Width (x1000) Example: .375 x 1000 = 375			Profile	
Energizer Material Code Example: - (Dash) = 70A Nitrile O-ring (For custom energizer options, see Table 6-3 on page 6-5.)																

Rod Gland Dimensions — BPP Profile, Type B PolyPak®

Please refer to Engineering [Section 2](#), [page 2-8](#) for surface finish and additional hardware considerations.

Table 6-15. BPP Profile — Rod Gland Calculation, Rubber and Polyurethane (90A)

A Rod Diameter		Seal		B Groove Diameter		C Groove Width	D Throat Diameter*	
Range	Tol.	Cross Section	Axial Width	Calculation	Tol.	+.015/ -.000	Calculation	Tol.
0.062 - 0.624	+.000/-.001	1/8 (.125)	3/16 (.187)	Dia. A + .250	+.002/-.000	0.206	Dia. A + .001	+.002/-.000
0.625 - 0.999	+.000/-.001	1/8 (.125)	1/4 (.250)	Dia. A + .250	+.002/-.000	0.275	Dia. A + .001	+.002/-.000
1.000 - 1.499	+.000/-.002	3/16 (.187)	5/16 (.312)	Dia. A + .375	+.002/-.000	0.343	Dia. A + .001	+.002/-.000
1.500 - 1.999	+.000/-.002	3/16 (.187)	3/8 (.375)	Dia. A + .375	+.002/-.000	0.413	Dia. A + .001	+.002/-.000
2.000 - 3.499	+.000/-.002	1/4 (.250)	3/8 (.375)	Dia. A + .500	+.003/-.000	0.413	Dia. A + .001	+.003/-.000
3.500 - 4.999	+.000/-.002	5/16 (.312)	1/2 (.500)	Dia. A + .625	+.004/-.000	0.550	Dia. A + .002	+.003/-.000
5.000 - 9.999	+.000/-.002	3/8 (.375)	5/8 (.625)	Dia. A + .750	+.005/-.000	0.688	Dia. A + .002	+.004/-.000
10.000 - 19.999	+.000/-.003	1/2 (.500)	3/4 (.750)	Dia. A + 1.000	+.007/-.000	0.825	Dia. A + .002	+.005/-.000
20.000 - 29.999	+.000/-.003	5/8 (.625)	1 (1.000)	Dia. A + 1.250	+.009/-.000	1.100	Dia. A + .002	+.006/-.000
30.000 - 39.999	+.000/-.004	3/4 (.750)	1-1/4 (1.250)	Dia. A + 1.500	+.011/-.000	1.375	Dia. A + .002	+.007/-.000
40.000 +	+.000/-.005	1 (1.000)	1-1/2 (1.500)	Dia. A + 2.000	+.015/-.000	1.650	Dia. A + .002	+.009/-.000

Table 6-16. BPP Profile — Rod Gland Calculation, Polymyte (60D)

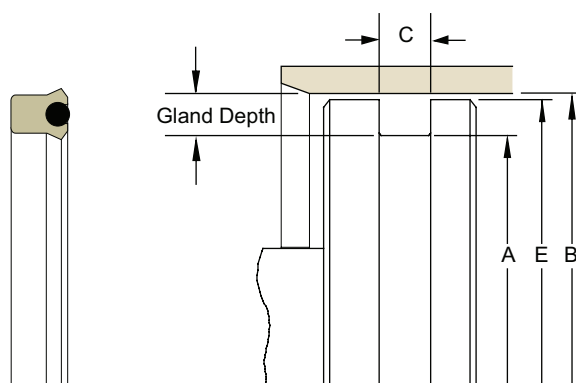
A Rod Diameter		Seal		B Groove Diameter		C Groove Width	D Throat Diameter*	
Range	Tol.	Cross Section	Axial Width	Calculation	Tol.	+.015/ -.000	Calculation	Tol.
0.062 - 0.999	+.000/-.001	1/8 (.125)	3/16 (.187)	Dia. A + .250	+.002/-.000	0.206	Dia. A + .001	+.002/-.000
1.000 - 1.749	+.000/-.001	1/8 (.125)	1/4 (.250)	Dia. A + .250	+.002/-.000	0.275	Dia. A + .001	+.002/-.000
1.750 - 2.249	+.000/-.002	3/16 (.187)	5/16 (.312)	Dia. A + .375	+.002/-.000	0.343	Dia. A + .001	+.002/-.000
2.250 - 2.749	+.000/-.002	3/16 (.187)	3/8 (.375)	Dia. A + .375	+.002/-.000	0.413	Dia. A + .001	+.002/-.000
2.750 - 3.499	+.000/-.002	1/4 (.250)	3/8 (.375)	Dia. A + .500	+.003/-.000	0.413	Dia. A + .001	+.003/-.000
3.500 - 4.999	+.000/-.002	5/16 (.312)	1/2 (.500)	Dia. A + .625	+.004/-.000	0.550	Dia. A + .002	+.003/-.000
5.000 - 9.999	+.000/-.002	3/8 (.375)	5/8 (.625)	Dia. A + .750	+.005/-.000	0.688	Dia. A + .002	+.004/-.000
10.000 - 19.999	+.000/-.003	1/2 (.500)	3/4 (.750)	Dia. A + 1.000	+.007/-.000	0.825	Dia. A + .002	+.005/-.000
20.000 - 29.999	+.000/-.003	5/8 (.625)	1 (1.000)	Dia. A + 1.250	+.009/-.000	1.100	Dia. A + .002	+.006/-.000
30.000 - 39.999	+.000/-.004	3/4 (.750)	1-1/4 (1.250)	Dia. A + 1.500	+.011/-.000	1.375	Dia. A + .002	+.007/-.000
40.000 +	+.000/-.005	1 (1.000)	1-1/2 (1.500)	Dia. A + 2.000	+.015/-.000	1.650	Dia. A + .002	+.009/-.000

* If used with wear rings, refer to wear ring throat diameter, see [Section 9](#).

Above table reflects recommended cross-sections for rod diameters shown. Alternate cross-sections and additional sizes may be considered. Consult www.parker.com/eps/FluidPower for additional cross-sections and sizes, hardware specifications, and part number availability. Contact your Parker representative for assistance.

06/01/2014

Piston Gland Dimensions — BPP Profile, Type B PolyPak®



Please refer to Engineering [Section 2](#),
page 2-8 for surface finish and additional
hardware considerations.

Table 6-17. BPP Profile — Piston Gland Calculation, Rubber and Polyurethane (90A)

B Bore Diameter		Seal		A Groove Diameter		C Groove Width	E Piston Diameter*	
Range	Tol.	Cross Section	Axial Width	Calculation	Tol.	+0.015/ -.000	Calculation	Tol.
0.312 - 1.499	+.002/-0.000	1/8 (.125)	1/4 (.250)	Dia. B - .250	+.000/-0.002	0.275	Dia. B - .001	+.000/-0.001
1.500 - 2.999	+.002/-0.000	3/16 (.187)	5/16 (.312)	Dia. B - .375	+.000/-0.002	0.343	Dia. B - .001	+.000/-0.002
3.000 - 5.999	+.003/-0.000	1/4 (.250)	3/8 (.375)	Dia. B - .500	+.000/-0.003	0.413	Dia. B - .001	+.000/-0.002
6.000 - 9.999	+.003/-0.000	5/16 (.312)	1/2 (.500)	Dia. B - .625	+.000/-0.004	0.550	Dia. B - .002	+.000/-0.002
10.000 - 19.999	+.004/-0.000	3/8 (.375)	5/8 (.625)	Dia. B - .750	+.000/-0.005	0.688	Dia. B - .002	+.000/-0.002
20.000 - 29.999	+.005/-0.000	1/2 (.500)	3/4 (.750)	Dia. B - 1.000	+.000/-0.007	0.825	Dia. B - .002	+.000/-0.003
30.000 - 39.999	+.006/-0.000	5/8 (.625)	1 (1.000)	Dia. B - 1.250	+.000/-0.009	1.100	Dia. B - .002	+.000/-0.003
40.000 - 49.999	+.007/-0.000	3/4 (.750)	1-1/4 (1.250)	Dia. B - 1.500	+.000/-0.010	1.375	Dia. B - .002	+.000/-0.004
50.000 +	+.009/-0.000	1 (1.000)	1-1/2 (1.500)	Dia. B - 2.000	+.000/-0.012	1.650	Dia. B - .002	+.000/-0.005

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Table 6-18. BPP Profile — Piston Gland Calculation, Polymyte (60D)

B Bore Diameter		Seal		A Groove Diameter		C Groove Width	E Piston Diameter*	
Range	Tol.	Cross Section	Axial Width	Calculation	Tol.	+0.015/ -.000	Calculation	Tol.
0.312 - 2.749	+.002/-0.000	1/8 (.125)	1/4 (.250)	Dia. B - .250	+.000/-0.002	0.275	Dia. B - .001	+.000/-0.001
2.750 - 4.499	+.002/-0.000	3/16 (.187)	5/16 (.312)	Dia. B - .375	+.000/-0.002	0.343	Dia. B - .001	+.000/-0.002
4.500 - 5.999	+.003/-0.000	1/4 (.250)	3/8 (.375)	Dia. B - .500	+.000/-0.003	0.413	Dia. B - .001	+.000/-0.002
6.000 - 9.999	+.003/-0.000	5/16 (.312)	1/2 (.500)	Dia. B - .625	+.000/-0.004	0.550	Dia. B - .002	+.000/-0.002
10.000 - 19.999	+.004/-0.000	3/8 (.375)	5/8 (.625)	Dia. B - .750	+.000/-0.005	0.688	Dia. B - .002	+.000/-0.002
20.000 - 29.999	+.005/-0.000	1/2 (.500)	3/4 (.750)	Dia. B - 1.000	+.000/-0.007	0.825	Dia. B - .002	+.000/-0.003
30.000 - 39.999	+.006/-0.000	5/8 (.625)	1 (1.000)	Dia. B - 1.250	+.000/-0.009	1.100	Dia. B - .002	+.000/-0.003
40.000 - 49.999	+.007/-0.000	3/4 (.750)	1-1/4 (1.250)	Dia. B - 1.500	+.000/-0.010	1.375	Dia. B - .002	+.000/-0.004
50.000+	+.009/-0.000	1 (1.000)	1-1/2 (1.500)	Dia. B - 2.000	+.000/-0.012	1.650	Dia. B - .002	+.000/-0.005

* If used with wear rings, refer to wear ring bore diameter, see [Section 9](#).

Above table reflects recommended cross-sections for piston diameters shown. Alternate cross-sections and additional sizes may be considered. Consult www.parker.com/eps/FluidPower for additional cross-sections and sizes, hardware specifications, and part number availability. Contact your Parker representative for assistance.

06/01/2014

Standard, Deep and Type B PolyPak Gland Dimensions

Catalog EPS 5370/USA

Gland Dimensions — Standard, Deep and Type B PolyPak Profiles

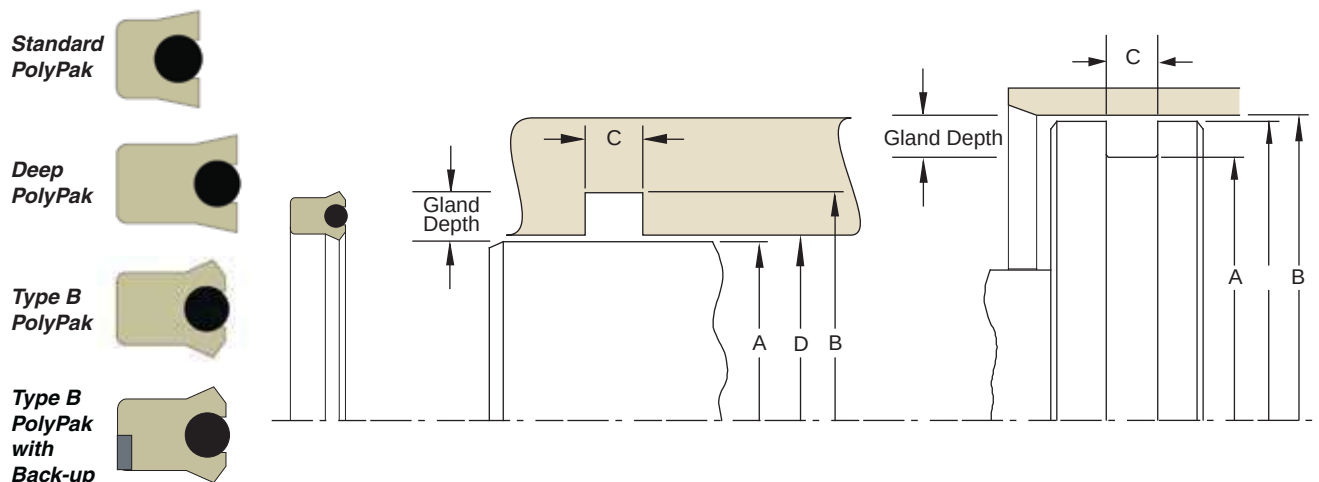


Table 6-7A. Rod Gland Dimension Tolerances

Nominal Gland Depth	A Rod Diameter	B Groove Diameter	C Groove Width	D Throat Diameter
1/8	+.000/-.001	+.002/-.000	+.015/-.000	+.002/-.000
3/16	+.000/-.002	+.002/-.000		+.002/-.000
1/4	+.000/-.002	+.003/-.000		+.003/-.000
5/16	+.000/-.002	+.004/-.000		+.003/-.000
3/8	+.000/-.002	+.005/-.000		+.004/-.000
7/16	+.000/-.003	+.006/-.000		+.004/-.000
1/2	+.000/-.003	+.007/-.000		+.005/-.000
5/8	+.000/-.003	+.009/-.000		+.006/-.000
3/4	+.000/-.004	+.011/-.000		+.007/-.000
1	+.000/-.005	+.015/-.000		+.009/-.000

Table 6-7B. Piston Gland Dimension Tolerances

Nominal Gland Depth	B Bore Diameter	A Groove Diameter	C Groove Width	E Piston Diameter
1/8	+.002/-.000	+.000/-.002	+.015/-.000	+.000/-.001
3/16	+.002/-.000	+.000/-.002		+.000/-.002
1/4	+.003/-.000	+.000/-.003		+.000/-.002
5/16	+.003/-.000	+.000/-.004		+.000/-.002
3/8	+.004/-.000	+.000/-.005		+.000/-.002
7/16	+.005/-.000	+.000/-.006		+.000/-.002
1/2	+.005/-.000	+.000/-.007		+.000/-.003
9/16	+.006/-.000	+.000/-.008		+.000/-.003
5/8	+.006/-.000	+.000/-.009		+.000/-.003
3/4	+.007/-.000	+.000/-.010		+.000/-.004
7/8	+.008/-.000	+.000/-.011		+.000/-.005
1	+.009/-.000	+.000/-.012		+.000/-.005

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

Table 6-8. Standard, Deep and Type B PolyPak Gland Dimensions

A	B	C		D	E	Compound Codes (X = Standard Offering)†						Part Number			
Rod Diameter	(Rod) Groove Diameter	(Std. PP) Groove Width	(Deep & B) Groove Width	Throat Diameter*	Piston Diameter**	Standard PP		Deep PP		Type B		Compound Code	Energizer Code	Add to the part number for Type B or Deep only	Add to the part number for Type B only
(Bore) Groove Diameter	Bore Diameter					Plastic	Rubber	Plastic	Rubber	Plastic	Rubber				
0.062	0.312	0.138	0.275	0.063	0.311	X						XXXX	12500062	-	250 B
0.093	0.343	0.138	0.275	0.094	0.342	X	X					XXXX	12500093	-	250 B
0.125	0.375	0.138	0.275	0.126	0.374	X	X		X	X		XXXX	12500125	-	250 B
0.140	0.390	0.138	0.275	0.141	0.389	X						XXXX	12500140	-	250 B

†For plastic compounds, see Table 3-1, page 3-11. For rubber compounds, see Table 3-3, page 3-14.

*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.

For custom groove calculations, see Appendix C.

02/15/08



Table 6-8. Standard, Deep and Type B PolyPak Gland Dimensions — Inch (Continued)

A	B	C		D	E	Compound Codes (X = Standard Offering) [†]						Part Number				
Rod Diameter	(Rod) Groove Diameter	(Std. PP) Groove Width	(Deep & B) Groove Width	Throat Diameter*	Piston Diameter**	Standard PP		Deep PP		Type B		Compound Code		Energizer Code	Add to the part number for Type B or Deep only	Add to the part number for Type B only
(Bore) Groove Diameter	Bore Diameter					Plastic	Rubber	Plastic	Rubber	Plastic	Rubber					
0.187	0.437	0.138	0.275	0.188	0.436	X	X			X	X	XXXX	12500187	—	250	B
0.187	0.562	0.206	0.343	0.188	0.561	X	X					XXXX	18700187	—	312	B
0.187	0.750	0.309	0.550	0.188	0.749	X						XXXX	28100187	—	500	B
0.218	0.468	0.138	0.275	0.219	0.467					X		XXXX	12500218	—	250	B
0.250	0.500	0.138	0.275	0.251	0.499	X	X	X		X	X	XXXX	12500250	—	250	B
0.250	0.625	0.206	0.343	0.251	0.624	X	X	X		X		XXXX	18700250	—	312	B
0.250	0.750	0.275	0.413	0.251	0.749	X				X		XXXX	25000250	—	375	B
0.250	0.875	0.343	0.550	0.252	0.873	X						XXXX	31200250	—	500	B
0.312	0.562	0.138	0.275	0.313	0.561	X	X	X		X	X	XXXX	12500312	—	250	B
0.312	0.687	0.206	0.343	0.313	0.686	X				X		XXXX	18700312	—	312	B
0.312	0.750	0.240	0.413	0.313	0.749	X						XXXX	21800312	—	375	B
0.312	0.812	0.275	0.413	0.313	0.811	X					X	XXXX	25000312	—	375	B
0.359	0.609	0.138	0.275	0.360	0.608	X						XXXX	12500359	—	250	B
0.375	0.625	0.138	0.206	0.376	0.624	X	X			X		XXXX	12500375	—	187	B
0.375	0.625	0.138	0.275	0.376	0.624					X	X	XXXX	12500375	—	250	B
0.375	0.750	0.206	0.293	0.376	0.749	X	X			X		XXXX	18700375	—	266	B
0.375	0.750	0.206	0.343	0.376	0.749			X	X	X		XXXX	18700375	—	312	B
0.375	0.875	0.275	0.413	0.376	0.874	X	X	X			X	XXXX	25000375	—	375	B
0.375	1.000	0.343	0.550	0.377	0.998	X						XXXX	31200375	—	500	B
0.437	0.687	0.138	0.275	0.438	0.686	X	X	X		X		XXXX	12500437	—	250	B
0.437	0.750	0.172	0.275	0.438	0.749	X						XXXX	15600437	—	250	B
0.437	0.812	0.206	0.343	0.438	0.811	X	X	X		X		XXXX	18700437	—	312	B
0.437	0.875	0.240	0.413	0.438	0.874	X						XXXX	21800437	—	375	B
0.437	0.937	0.275	0.413	0.438	0.936	X	X	X		X		XXXX	25000437	—	375	B
0.437	1.062	0.343	0.550	0.439	1.060	X						XXXX	31200437	—	500	B
0.500	0.750	0.138	0.138	0.501	0.749	X	X			X	X	XXXX	12500500	—	125	B
0.500	0.750	0.138	0.275	0.501	0.749			X	X	X	X	XXXX	12500500	—	250	B
0.500	0.875	0.206	0.343	0.501	0.874	X	X			X	X	XXXX	18700500	—	312	B
0.500	1.000	0.275	0.413	0.501	0.999	X		X		X		XXXX	25000500	—	375	B
0.500	1.125	0.343	0.550	0.502	1.123	X	X					XXXX	31200500	—	500	B
0.500	1.250	0.413	0.688	0.502	1.248	X						XXXX	37500500	—	625	B
0.531	0.781	0.138	0.275	0.532	0.780	X						XXXX	12500531	—	250	B
0.562	0.812	0.138	0.138	0.563	0.811	X	X			X		XXXX	12500562	—	125	B
0.562	0.812	0.138	0.275	0.563	0.811					X	X	XXXX	12500562	—	250	B
0.562	0.936	0.206	0.343	0.563	0.935	X				X	X	XXXX	18700562	—	312	B
0.562	1.000	0.240	0.413	0.563	0.999	X						XXXX	21800562	—	375	B
0.562	1.062	0.275	0.413	0.563	1.061	X				X		XXXX	25000562	—	375	B
0.625	0.875	0.138	0.138	0.626	0.874		X			X	X	XXXX	12500625	—	125	B
0.625	0.875	0.138	0.206	0.626	0.874	X		X		X		XXXX	12500625	—	187	B
0.625	0.875	0.138	0.227	0.626	0.874						X	XXXX	12500625	—	206	B
0.625	0.875	0.138	0.275	0.626	0.874			X	X	X	X	XXXX	12500625	—	250	B
0.625	1.000	0.206	0.343	0.626	0.999	X	X	X	X	X	X	XXXX	18700625	—	312	B

[†]For plastic compounds, see Table 3-1, page 3-11. For rubber compounds, see Table 3-3, page 3-14.

*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.

For custom groove calculations, see Appendix C.

Standard, Deep and Type B PolyPak Profile

Table 6-8. Standard, Deep and Type B PolyPak Gland Dimensions — Inch (Continued)

A	B	C		D	E	Compound Codes (X = Standard Offering)†						Part Number				
Rod Diameter	(Rod) Groove Diameter	(Std. PP) Groove Width	(Deep & B) Groove Width	Throat Diameter*	Piston Diameter**	Standard PP		Deep PP		Type B		Compound Code		Energizer Code	Add to the part number for Type B or Deep only	Add to the part number for Type B only
(Bore) Groove Diameter	Bore Diameter					Plastic	Rubber	Plastic	Rubber	Plastic	Rubber					
0.625	1.125	0.275	0.413	0.626	1.124	X	X	X	X	X	X	XXXX	25000625	—	375	B
0.625	1.250	0.343	0.550	0.627	1.248	X						XXXX	31200625	—	500	B
0.625	1.375	0.413	0.688	0.627	1.373	X						XXXX	37500625	—	625	B
0.656	1.031	0.206	0.343	0.657	1.030	X						XXXX	18700656	—	312	B
0.687	0.937	0.138	0.275	0.688	0.936	X	X	X		X	X	XXXX	12500687	—	250	B
0.687	1.061	0.206	0.206	0.688	1.060	X	X				X	XXXX	18700687	—	187	B
0.687	1.061	0.206	0.343	0.688	1.060					X		XXXX	18700687	—	312	B
0.687	1.187	0.275	0.413	0.688	1.186	X				X		XXXX	25000687	—	375	B
0.687	1.250	0.309	0.550	0.688	1.249	X						XXXX	28100687	—	500	B
0.687	1.312	0.343	0.550	0.689	1.310	X						XXXX	31200687	—	500	B
0.750	1.000	0.138	0.138	0.751	0.999	X	X			X		XXXX	12500750	—	125	B
0.750	1.000	0.138	0.206	0.751	0.999					X		XXXX	12500750	—	187	B
0.750	1.000	0.138	0.275	0.751	0.999			X	X	X	X	XXXX	12500750	—	250	B
0.750	1.062	0.172	0.275	0.751	1.061	X						XXXX	15600750	—	250	B
0.750	1.125	0.206	0.275	0.751	1.124			X	X			XXXX	18700750	—	250	B
0.750	1.125	0.206	0.343	0.751	1.124	X	X	X		X	X	XXXX	18700750	—	312	B
0.750	1.188	0.240	0.413	0.751	1.187	X						XXXX	21800750	—	375	B
0.750	1.250	0.275	0.413	0.751	1.249	X	X	X	X	X	X	XXXX	25000750	—	375	B
0.750	1.375	0.343	0.550	0.752	1.373	X	X	X		X		XXXX	31200750	—	500	B
0.750	1.500	0.413	0.688	0.752	1.498	X		X				XXXX	37500750	—	625	B
0.800	1.050	0.138	0.275	0.801	1.049					X		XXXX	12500800	—	250	B
0.812	1.062	0.138	0.138	0.813	1.061	X	X			X		XXXX	12500812	—	125	B
0.812	1.062	0.138	0.275	0.813	1.061					X		XXXX	12500812	—	250	B
0.812	1.186	0.206	0.343	0.813	1.185	X	X	X		X	X	XXXX	18700812	—	312	B
0.812	1.312	0.275	0.413	0.813	1.311	X						XXXX	25000812	—	375	B
0.812	1.436	0.343	0.550	0.814	1.434	X				X		XXXX	31200812	—	500	B
0.875	1.125	0.138	0.138	0.876	1.124	X	X			X	X	XXXX	12500875	—	125	B
0.875	1.125	0.138	0.206	0.876	1.124			X		X		XXXX	12500875	—	187	B
0.875	1.125	0.138	0.275	0.876	1.124			X	X	X	X	XXXX	12500875	—	250	B
0.875	1.250	0.206	0.275	0.876	1.249				X			XXXX	18700875	—	250	B
0.875	1.250	0.206	0.343	0.876	1.249	X	X	X	X	X		XXXX	18700875	—	312	B
0.875	1.250	0.206	0.413	0.876	1.249			X				XXXX	18700875	—	375	B
0.875	1.375	0.275	0.413	0.876	1.374	X	X			X	X	XXXX	25000875	—	375	B
0.875	1.500	0.343	0.550	0.877	1.498	X						XXXX	31200875	—	500	B
0.875	1.625	0.413	0.688	0.877	1.623	X						XXXX	37500875	—	625	B
0.906	1.156	0.138	0.275	0.907	1.155	X						XXXX	12500906	—	250	B
0.937	1.187	0.138	0.275	0.938	1.186	X	X			X		XXXX	12500937	—	250	B
0.937	1.250	0.172	0.275	0.938	1.249	X	X					XXXX	15600937	—	250	B
0.937	1.312	0.206	0.343	0.938	1.311	X	X			X	X	XXXX	18700937	—	312	B
0.937	1.375	0.240	0.413	0.938	1.374	X						XXXX	21800937	—	375	B
0.937	1.437	0.275	0.413	0.938	1.436	X						XXXX	25000937	—	375	B
0.937	1.687	0.413	0.688	0.939	1.685	X						XXXX	37500937	—	625	B

†For plastic compounds, see Table 3-1, page 3-11. For rubber compounds, see Table 3-3, page 3-14.

*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.

For custom groove calculations, see Appendix C.

Table 6-8. Standard, Deep and Type B PolyPak Gland Dimensions — Inch (Continued)

A	B	C		D	E	Compound Codes (X = Standard Offering) [†]						Part Number				
Rod Diameter	(Rod) Groove Diameter	(Std. PP) Groove Width	(Deep & B) Groove Width	Throat Diameter*	Piston Diameter**	Standard PP		Deep PP		Type B		Com- pound Code		Ener- gizer Code	Add to the part number for Type B or Deep only	Add to the part number for Type B only
(Bore) Groove Diameter	Bore Diameter					Plastic	Rubber	Plastic	Rubber	Plastic	Rubber					
1.000	1.250	0.138	0.138	1.001	1.249	X	X			X		XXXX	12501000	—	125	B
1.000	1.250	0.138	0.172	1.001	1.249					X		XXXX	12501000	—	156	B
1.000	1.250	0.138	0.189	1.001	1.249			X				XXXX	12501000	—	172	B
1.000	1.250	0.138	0.206	1.001	1.249					X		XXXX	12501000	—	187	B
1.000	1.250	0.138	0.275	1.001	1.249			X	X	X	X	XXXX	12501000	—	250	B
1.000	1.312	0.172	0.172	1.001	1.311	X	X			X		XXXX	15601000	—	156	B
1.000	1.312	0.172	0.257	1.001	1.311					X		XXXX	15601000	—	234	B
1.000	1.375	0.206	0.275	1.001	1.374			X	X			XXXX	18701000	—	250	B
1.000	1.375	0.206	0.343	1.001	1.374	X	X	X	X	X	X	XXXX	18701000	—	312	B
1.000	1.500	0.275	0.275	1.001	1.499	X	X			X		XXXX	25001000	—	250	B
1.000	1.500	0.275	0.413	1.001	1.499			X	X	X	X	XXXX	25001000	—	375	B
1.000	1.625	0.343	0.550	1.002	1.623	X	X	X		X		XXXX	31201000	—	500	B
1.000	1.750	0.413	0.688	1.002	1.748	X	X	X				XXXX	37501000	—	625	B
1.000	1.875	0.481	0.688	1.002	1.873	X						XXXX	43701000	—	625	B
1.000	2.000	0.550	0.825	1.002	1.998	X						XXXX	50001000	—	750	B
1.000	2.000	0.550	0.825	1.002	1.998			X				XXXX	50001000	—	750	B
1.062	1.312	0.138	0.187	1.063	1.311	X	X			X		XXXX	12501062	—	170	B
1.062	1.312	0.138	0.275	1.063	1.311					X		XXXX	12501062	—	250	B
1.062	1.375	0.172	0.275	1.063	1.374	X						XXXX	15601062	—	250	B
1.062	1.436	0.206	0.343	1.063	1.435	X	X	X	X	X		XXXX	18701062	—	312	B
1.062	1.562	0.275	0.413	1.063	1.561	X						XXXX	25001062	—	375	B
1.062	1.687	0.343	0.550	1.064	1.685	X						XXXX	31201062	—	500	B
1.093	1.593	0.275	0.413	1.094	1.592	X						XXXX	25001093	—	375	B
1.125	1.375	0.138	0.129	1.126	1.374	X	X			X		XXXX	12501125	—	117	B
1.125	1.375	0.138	0.195	1.126	1.374					X		XXXX	12501125	—	177	B
1.125	1.375	0.138	0.275	1.126	1.374			X		X	X	XXXX	12501125	—	250	B
1.125	1.500	0.206	0.206	1.126	1.499	X	X			X		XXXX	18701125	—	187	B
1.125	1.500	0.206	0.343	1.126	1.499			X	X	X	X	XXXX	18701125	—	312	B
1.125	1.625	0.275	0.413	1.126	1.624	X	X	X	X	X	X	XXXX	25001125	—	375	B
1.125	1.750	0.343	0.550	1.127	1.748	X	X	X		X		XXXX	31201125	—	500	B
1.125	1.875	0.413	0.688	1.127	1.873	X	X					XXXX	37501125	—	625	B
1.125	2.000	0.481	0.550	1.127	1.998					X		XXXX	43701125	—	500	B
1.125	2.000	0.481	0.688	1.127	1.998	X						XXXX	43701250	—	625	B
1.187	1.437	0.138	0.196	1.188	1.436	X	X			X		XXXX	12501187	—	178	B
1.187	1.437	0.138	0.206	1.188	1.436			X				XXXX	12501187	—	187	B
1.187	1.437	0.138	0.275	1.188	1.436					X	X	XXXX	12501187	—	250	B
1.187	1.500	0.172	0.275	1.188	1.499	X	X					XXXX	15601187	—	250	B
1.187	1.562	0.206	0.343	1.188	1.561	X	X			X		XXXX	18701187	—	312	B
1.187	1.687	0.275	0.413	1.188	1.686	X					X	XXXX	25001187	—	375	B
1.187	1.812	0.343	0.550	1.189	1.810	X		X				XXXX	31201187	—	500	B
1.187	2.000	0.447	0.688	1.189	1.998	X						XXXX	40601187	—	625	B
1.250	1.500	0.138	0.206	1.251	1.499	X	X	X		X	X	XXXX	12501250	—	187	B

[†]For plastic compounds, see Table 3-1, page 3-11. For rubber compounds, see Table 3-3, page 3-14.

*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.

For custom groove calculations, see Appendix C.

Standard, Deep and Type B PolyPak Profile

Table 6-8. Standard, Deep and Type B PolyPak Gland Dimensions — Inch (Continued)

A	B	C		D	E	Compound Codes (X = Standard Offering)†						Part Number				
Rod Diameter	(Rod) Groove Diameter	(Std. PP) Groove Width	(Deep & B) Groove Width	Throat Diameter*	Piston Diameter**	Standard PP		Deep PP		Type B		Compound Code		Energizer Code	Add to the part number for Type B or Deep only	Add to the part number for Type B only
(Bore) Groove Diameter	Bore Diameter			Plastic		Rubber	Plastic	Rubber	Plastic	Rubber						
1.250	1.500	0.138	0.275	1.251	1.499				X	X	X	XXXX	12501250	–	250	B
1.250	1.563	0.172	0.275	1.251	1.562	X	X					XXXX	15601250	–	250	B
1.250	1.625	0.206	0.275	1.251	1.624	X	X			X		XXXX	18701250	–	250	B
1.250	1.625	0.206	0.343	1.251	1.624			X	X	X	X	XXXX	18701250	–	312	B
1.250	1.625	0.206	0.413	1.251	1.624					X		XXXX	18701250	–	375	B
1.250	1.750	0.275	0.275	1.251	1.749	X	X			X		XXXX	25001250	–	250	B
1.250	1.750	0.275	0.413	1.251	1.749			X	X	X	X	XXXX	25001250	–	375	B
1.250	1.875	0.343	0.550	1.252	1.873	X		X		X	X	XXXX	31201250	–	500	B
1.250	2.000	0.413	0.688	1.252	1.998	X	X	X		X		XXXX	37501250	–	625	B
1.250	2.063	0.447	0.688	1.252	2.061	X						XXXX	40601250	–	625	B
1.250	2.250	0.550	0.825	1.252	2.248	X						XXXX	50001250	–	750	B
1.250	2.500	0.688	0.963	1.253	2.497	X						XXXX	62501750	–	875	B
1.312	1.562	0.138	0.206	1.313	1.561	X	X			X		XXXX	12501312	–	187	B
1.312	1.625	0.172	0.275	1.313	1.624	X						XXXX	15601312	–	250	B
1.312	1.686	0.206	0.206	1.313	1.685	X	X			X		XXXX	18701312	–	187	B
1.312	1.686	0.206	0.343	1.313	1.685					X		XXXX	18701312	–	312	B
1.312	1.812	0.275	0.413	1.313	1.811	X	X	X		X		XXXX	25001312	–	375	B
1.312	1.937	0.343	0.550	1.314	1.935	X						XXXX	31201312	–	500	B
1.312	2.000	0.377	0.688	1.314	1.998	X						XXXX	34301312	–	625	B
1.312	2.062	0.413	0.481	1.314	2.060	X		X				XXXX	37501312	–	437	B
1.312	2.312	0.550	0.825	1.314	2.310	X						XXXX	50001312	–	750	B
1.375	1.625	0.138	0.138	1.376	1.624	X	X			X		XXXX	12501375	–	125	B
1.375	1.625	0.138	0.196	1.376	1.624					X		XXXX	12501375	–	178	B
1.375	1.625	0.138	0.275	1.376	1.624			X	X	X	X	XXXX	12501375	–	250	B
1.375	1.687	0.172	0.172	1.376	1.686	X	X			X		XXXX	15601375	–	156	B
1.375	1.750	0.206	0.343	1.376	1.749	X	X	X	X	X	X	XXXX	18701375	–	312	B
1.375	1.750	0.206	0.413	1.376	1.749					X		XXXX	18701375	–	375	B
1.375	1.875	0.275	0.413	1.376	1.874	X	X	X	X	X	X	XXXX	25001375	–	375	B
1.375	2.000	0.343	0.550	1.377	1.998	X	X	X	X	X	X	XXXX	31201375	–	500	B
1.375	2.125	0.413	0.688	1.377	2.123	X	X			X		XXXX	37501375	–	625	B
1.375	2.250	0.481	0.688	1.377	2.248	X						XXXX	43701375	–	625	B
1.375	2.375	0.550	0.825	1.377	2.373	X						XXXX	50001375	–	750	B
1.437	1.687	0.138	0.275	1.438	1.686	X	X	X	X	X		XXXX	12501437	–	250	B
1.437	1.812	0.206	0.343	1.438	1.811	X	X	X		X	X	XXXX	18701437	–	312	B
1.437	1.937	0.275	0.413	1.438	1.936		X					XXXX	25001437	–	375	B
1.437	2.061	0.343	0.550	1.439	2.059					X		XXXX	31201437	–	500	B
1.437	2.187	0.413	0.688	1.439	2.185	X						XXXX	37501437	–	625	B
1.437	2.312	0.481	0.688	1.439	2.310	X						XXXX	43701437	–	625	B
1.500	1.750	0.138	0.138	1.501	1.749	X	X			X		XXXX	12501500	–	125	B
1.500	1.750	0.138	0.206	1.501	1.749					X		XXXX	12501500	–	187	B
1.500	1.750	0.138	0.275	1.501	1.749			X		X	X	XXXX	12501500	–	250	B
1.500	1.750	0.138	0.343	1.501	1.749			X				XXXX	12501500	–	312	B

†For plastic compounds, see Table 3-1, page 3-11. For rubber compounds, see Table 3-3, page 3-14.

*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.

For custom groove calculations, see Appendix C.

Table 6-8. Standard, Deep and Type B PolyPak Gland Dimensions — Inch (Continued)

A	B	C		D	E	Compound Codes (X = Standard Offering) [†]						Part Number				
Rod Diameter	(Rod) Groove Diameter	(Std. PP) Groove Width	(Deep & B) Groove Width	Throat Diameter*	Piston Diameter**	Standard PP		Deep PP		Type B		Compound Code		Energizer Code	Add to the part number for Type B or Deep only	Add to the part number for Type B only
(Bore) Groove Diameter	Bore Diameter					Plastic	Rubber	Plastic	Rubber	Plastic	Rubber					
1.500	1.812	0.172	0.343	1.501	1.811	X				X		XXXX	15601500	—	312	B
1.500	1.875	0.206	0.206	1.501	1.874	X	X			X		XXXX	18701500	—	187	B
1.500	1.875	0.206	0.275	1.501	1.874			X		X	X	XXXX	18701500	—	250	B
1.500	1.875	0.206	0.309	1.501	1.874			X				XXXX	18701500	—	281	B
1.500	1.875	0.206	0.343	1.501	1.874					X		XXXX	18701500	—	312	B
1.500	1.875	0.206	0.413	1.501	1.874			X	X	X	X	XXXX	18701500	—	375	B
1.500	2.000	0.275	0.275	1.501	1.999	X	X			X		XXXX	25001500	—	250	B
1.500	2.000	0.275	0.413	1.501	1.999			X	X	X	X	XXXX	25001500	—	375	B
1.500	2.125	0.343	0.550	1.502	2.123	X	X	X		X	X	XXXX	31201500	—	500	B
1.500	2.250	0.413	0.688	1.502	2.248	X	X			X	X	XXXX	37501500	—	625	B
1.500	2.375	0.481	0.688	1.502	2.373	X						XXXX	43701500	—	625	B
1.500	2.500	0.550	0.825	1.502	2.498	X	X			X		XXXX	50001500	—	750	B
1.562	1.812	0.138	0.275	1.563	1.811	X						XXXX	12501562	—	250	B
1.562	1.937	0.206	0.275	1.563	1.936	X	X	X			X	XXXX	18701562	—	250	B
1.562	2.312	0.413	0.688	1.564	2.310	X						XXXX	37501562	—	625	B
1.625	1.875	0.138	0.275	1.626	1.874	X						XXXX	12501625	—	250	B
1.625	1.875	0.138	0.275	1.626	1.874			X				XXXX	12501625	—	250	B
1.625	2.000	0.206	0.206	1.626	1.999	X	X			X		XXXX	18701625	—	187	B
1.625	2.000	0.206	0.275	1.626	1.999			X				XXXX	18701625	—	250	B
1.625	2.000	0.206	0.293	1.626	1.999					X		XXXX	18701625	—	266	B
1.625	2.000	0.206	0.343	1.626	1.999			X		X		XXXX	18701625	—	312	B
1.625	2.000	0.206	0.413	1.626	1.999			X	X	X	X	XXXX	18701625	—	375	B
1.625	2.125	0.275	0.413	1.626	2.124	X	X			X	X	XXXX	25001625	—	375	B
1.625	2.250	0.343	0.550	1.627	2.248	X	X			X		XXXX	31201625	—	500	B
1.625	2.375	0.413	0.413	1.627	2.373	X	X			X		XXXX	37501625	—	375	B
1.625	2.375	0.413	0.688	1.627	2.373					X		XXXX	37501625	—	625	B
1.687	1.937	0.138	0.275	1.688	1.936	X						XXXX	12501687	—	250	B
1.687	2.062	0.206	0.413	1.688	2.061			X				XXXX	18701687	—	375	B
1.687	2.312	0.343	0.550	1.689	2.310	X				X		XXXX	31201687	—	500	B
1.750	2.000	0.138	0.138	1.751	1.999	X	X			X		XXXX	12501750	—	125	B
1.750	2.000	0.138	0.275	1.751	1.999			X				XXXX	12501750	—	250	B
1.750	2.125	0.206	0.206	1.751	2.124	X	X				X	XXXX	18701750	—	187	B
1.750	2.125	0.206	0.253	1.751	2.124			X		X		XXXX	18701750	—	230	B
1.750	2.125	0.206	0.275	1.751	2.124				X			XXXX	18701750	—	250	B
1.750	2.125	0.206	0.293	1.751	2.124					X	X	XXXX	18701750	—	266	B
1.750	2.125	0.206	0.343	1.751	2.124					X	X	XXXX	18701750	—	312	B
1.750	2.125	0.206	0.413	1.751	2.124			X	X	X	X	XXXX	18701750	—	375	B
1.750	2.188	0.240	0.413	1.751	2.187	X						XXXX	21801750	—	375	B
1.750	2.250	0.275	0.275	1.751	2.249	X	X			X		XXXX	25001750	—	250	B
1.750	2.250	0.275	0.413	1.751	2.249			X	X	X	X	XXXX	25001750	—	375	B
1.750	2.375	0.343	0.550	1.752	2.373	X	X	X	X	X	X	XXXX	31201750	—	500	B
1.750	2.500	0.413	0.688	1.752	2.498	X	X			X	X	XXXX	37501750	—	625	B

[†]For plastic compounds, see Table 3-1, page 3-11. For rubber compounds, see Table 3-3, page 3-14.

*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.

For custom groove calculations, see Appendix C.

Standard, Deep and Type B PolyPak Profile

Table 6-8. Standard, Deep and Type B PolyPak Gland Dimensions — Inch (Continued)

A	B	C		D	E	Compound Codes (X = Standard Offering)†						Part Number				
Rod Diameter	(Rod) Groove Diameter	(Std. PP) Groove Width	(Deep & B) Groove Width	Throat Diameter*	Piston Diameter**	Standard PP		Deep PP		Type B		Compound Code		Energizer Code	Add to the part number for Type B or Deep only	Add to the part number for Type B only
(Bore) Groove Diameter	Bore Diameter			Plastic		Rubber	Plastic	Rubber	Plastic	Rubber						
1.750	2.563	0.447	0.688	1.752	2.561	X						XXXX	40601750	–	625	B
1.750	2.625	0.481	0.688	1.752	2.623	X						XXXX	43701750	–	625	B
1.750	2.750	0.550	0.825	1.752	2.748			X				XXXX	50001750	–	750	B
1.750	3.000	0.688	0.963	1.753	2.997	X						XXXX	62501812	–	875	B
1.812	2.187	0.206	0.343	1.813	2.186	X						XXXX	18701812	–	312	B
1.812	2.500	0.377	0.688	1.814	2.498	X						XXXX	34301812	–	625	B
1.875	2.125	0.138	0.138	1.876	2.124	X	X			X		XXXX	12501875	–	125	B
1.875	2.125	0.138	0.275	1.876	2.124					X	X	XXXX	12501875	–	250	B
1.875	2.250	0.206	0.275	1.876	2.249				X			XXXX	18701875	–	250	B
1.875	2.250	0.206	0.308	1.876	2.249				X			XXXX	18701875	–	280	B
1.875	2.250	0.206	0.413	1.876	2.249	X	X	X	X	X	X	XXXX	18701875	–	375	B
1.875	2.375	0.275	0.413	1.876	2.374	X	X			X	X	XXXX	25001875	–	375	B
1.875	2.500	0.343	0.550	1.877	2.498	X	X	X		X	X	XXXX	31201875	–	500	B
1.875	2.625	0.413	0.688	1.877	2.623	X	X	X				XXXX	37501875	–	625	B
1.875	2.750	0.481	0.688	1.877	2.748	X						XXXX	43701875	–	625	B
1.875	2.875	0.550	0.825	1.877	2.873	X						XXXX	50001875	–	750	B
1.875	3.000	0.618	0.963	1.877	2.998			X				XXXX	56201875	–	875	B
1.875	3.125	0.688	1.100	1.878	3.122			X				XXXX	62501875	–	1000	B
1.937	2.312	0.206	0.309	1.938	2.311	X	X			X		XXXX	18701937	–	281	B
1.937	2.312	0.206	0.413	1.938	2.311			X				XXXX	18701937	–	375	B
1.937	2.437	0.275	0.413	1.938	2.436					X		XXXX	25001937	–	375	B
1.937	2.562	0.343	0.550	1.939	2.560	X						XXXX	31201937	–	500	B
2.000	2.250	0.138	0.206	2.001	2.249	X	X		X	X		XXXX	12502000	–	187	B
2.000	2.250	0.138	0.275	2.001	2.249			X				XXXX	12502000	–	250	B
2.000	2.375	0.206	0.206	2.001	2.374	X	X			X	X	XXXX	18702000	–	187	B
2.000	2.375	0.206	0.253	2.001	2.374					X		XXXX	18702000	–	230	B
2.000	2.375	0.206	0.289	2.001	2.374						X	XXXX	18702000	–	263	B
2.000	2.375	0.206	0.343	2.001	2.374					X	X	XXXX	18702000	–	312	B
2.000	2.375	0.206	0.413	2.001	2.374			X	X	X	X	XXXX	18702000	–	375	B
2.000	2.438	0.240	0.413	2.001	2.437			X				XXXX	21802000	–	375	B
2.000	2.500	0.275	0.275	2.001	2.499	X	X			X		XXXX	25002000	–	250	B
2.000	2.500	0.275	0.413	2.001	2.499			X	X	X	X	XXXX	25002000	–	375	B
2.000	2.625	0.343	0.550	2.002	2.623		X	X	X	X		XXXX	31202000	–	500	B
2.000	2.750	0.413	0.550	2.002	2.748			X				XXXX	37502000	–	500	B
2.000	2.750	0.413	0.688	2.002	2.748	X	X	X		X	X	XXXX	37502000	–	625	B
2.000	2.875	0.481	0.688	2.002	2.873	X						XXXX	43702000	–	625	B
2.000	3.000	0.550	0.825	2.002	2.998	X	X			X		XXXX	50002000	–	750	B
2.000	3.250	0.688	1.100	2.003	3.247	X						XXXX	62502000	–	1000	B
2.062	2.375	0.172	0.275	2.063	2.374	X						XXXX	15602062	–	250	B
2.062	2.437	0.206	0.413	2.063	2.436	X						XXXX	18702062	–	375	B
2.062	2.500	0.240	0.413	2.063	2.499	X						XXXX	21802062	–	375	B
2.062	2.812	0.413	0.688	2.064	2.810	X						XXXX	37502062	–	625	B

†For plastic compounds, see Table 3-1, page 3-11. For rubber compounds, see Table 3-3, page 3-14.

*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.

For custom groove calculations, see Appendix C.

Table 6-8. Standard, Deep and Type B PolyPak Gland Dimensions — Inch (Continued)

A	B	C		D	E	Compound Codes (X = Standard Offering) [†]						Part Number				
Rod Diameter	(Rod) Groove Diameter	(Std. PP) Groove Width	(Deep & B) Groove Width	Throat Diameter*	Piston Diameter**	Standard PP		Deep PP		Type B		Com- pound Code		Energizer Code	Add to the part number for Type B or Deep only	Add to the part number for Type B only
(Bore) Groove Diameter	Bore Diameter			Plastic		Rubber	Plastic	Rubber	Plastic	Rubber						
2.125	2.375	0.138	0.275	2.126	2.374	X				X		XXXX	12502125	–	250	B
2.125	2.500	0.206	0.206	2.126	2.499	X	X			X		XXXX	18702125	–	187	B
2.125	2.500	0.206	0.275	2.126	2.499			X		X		XXXX	18702125	–	250	B
2.125	2.500	0.206	0.413	2.126	2.499				X	X	X	XXXX	18702125	–	375	B
2.125	2.625	0.275	0.275	2.126	2.624	X	X			X		XXXX	25002125	–	250	B
2.125	2.625	0.275	0.413	2.126	2.624			X	X	X	X	XXXX	25002125	–	375	B
2.125	2.750	0.343	0.550	2.127	2.748	X	X	X	X	X	X	XXXX	31202125	–	500	B
2.125	2.875	0.413	0.688	2.127	2.873	X	X	X	X			XXXX	37502125	–	625	B
2.125	3.000	0.481	0.688	2.127	2.998	X						XXXX	43702125	–	625	B
2.125	3.125	0.550	0.825	2.127	3.123	X						XXXX	50002125	–	750	B
2.187	2.562	0.206	0.413	2.188	2.561			X	X			XXXX	18702187	–	375	B
2.250	2.500	0.138	0.206	2.251	2.499	X			X			XXXX	12502250	–	187	B
2.250	2.625	0.206	0.343	2.251	2.624				X			XXXX	18702250	–	312	B
2.250	2.625	0.206	0.413	2.251	2.624	X	X	X	X	X	X	XXXX	18702250	–	375	B
2.250	2.750	0.275	0.413	2.251	2.749	X	X	X	X	X	X	XXXX	25002250	–	375	B
2.250	2.812	0.309	0.413	2.251	2.811					X		XXXX	28102250	–	375	B
2.250	2.875	0.343	0.550	2.252	2.873	X	X			X	X	XXXX	31202250	–	500	B
2.250	3.000	0.413	0.688	2.252	2.998	X	X	X		X		XXXX	37502250	–	625	B
2.250	3.125	0.481	0.413	2.252	3.123			X				XXXX	43702250	–	375	B
2.250	3.125	0.481	0.688	2.252	3.123					X		XXXX	43702250	–	625	B
2.250	3.250	0.550	0.825	2.252	3.248	X						XXXX	50002250	–	750	B
2.312	2.875	0.309	0.550	2.313	2.874	X						XXXX	28102312	–	500	B
2.312	2.937	0.343	0.550	2.314	2.935	X						XXXX	31202312	–	500	B
2.312	3.000	0.377	0.688	2.314	2.998	X						XXXX	34302312	–	625	B
2.375	2.625	0.138	0.275	2.376	2.624	X	X	X				XXXX	12502375	–	250	B
2.375	2.750	0.206	0.275	2.376	2.749				X			XXXX	18702375	–	250	B
2.375	2.750	0.206	0.293	2.376	2.749	X	X			X		XXXX	18702375	–	266	B
2.375	2.750	0.206	0.343	2.376	2.749				X			XXXX	18702375	–	312	B
2.375	2.750	0.206	0.413	2.376	2.749			X		X	X	XXXX	18702375	–	375	B
2.375	2.875	0.275	0.275	2.376	2.874	X	X			X		XXXX	25002375	–	250	B
2.375	2.875	0.275	0.413	2.376	2.874				X	X	X	XXXX	25002375	–	375	B
2.375	3.000	0.343	0.550	2.377	2.998	X	X	X	X	X		XXXX	31202375	–	500	B
2.375	3.125	0.413	0.688	2.377	3.123	X	X			X	X	XXXX	37502375	–	625	B
2.375	3.375	0.550	0.825	2.377	3.373	X						XXXX	50002375	–	750	B
2.437	3.187	0.413	0.688	2.439	3.185	X						XXXX	37502437	–	625	B
2.500	2.750	0.138	0.275	2.501	2.749	X		X	X	X		XXXX	12502500	–	250	B
2.500	2.875	0.206	0.275	2.501	2.874	X	X		X	X	X	XXXX	18702500	–	250	B
2.500	2.875	0.206	0.413	2.501	2.874			X	X	X	X	XXXX	18702500	–	375	B
2.500	2.937	0.240	0.240	2.501	2.936	X	X				X	XXXX	21802500	–	218	B
2.500	2.937	0.240	0.320	2.501	2.936						X	XXXX	21802500	–	291	B
2.500	2.937	0.240	0.413	2.501	2.936						X	XXXX	21802500	–	375	B
2.500	3.000	0.275	0.275	2.501	2.999	X	X			X		XXXX	25002500	–	250	B

[†]For plastic compounds, see Table 3-1, page 3-11. For rubber compounds, see Table 3-3, page 3-14.

*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.

For custom groove calculations, see Appendix C.

Standard, Deep and Type B PolyPak Profile

Table 6-8. Standard, Deep and Type B PolyPak Gland Dimensions — Inch (Continued)

A	B	C		D	E	Compound Codes (X = Standard Offering)†						Part Number				
Rod Diameter	(Rod) Groove Diameter	(Std. PP) Groove Width	(Deep & B) Groove Width	Throat Diameter*	Piston Diameter**	Standard PP		Deep PP		Type B		Compound Code		Energizer Code	Add to the part number for Type B or Deep only	Add to the part number for Type B only
(Bore) Groove Diameter	Bore Diameter			Plastic		Rubber	Plastic	Rubber	Plastic	Rubber						
2.500	3.000	0.275	0.413	2.501	2.999			X	X	X	X	XXXX	25002500	–	375	B
2.500	3.125	0.343	0.550	2.502	3.123	X	X	X		X	X	XXXX	31202500	–	500	B
2.500	3.188	0.377	0.688	2.502	3.186	X						XXXX	34302500	–	625	B
2.500	3.250	0.413	0.688	2.502	3.248	X	X	X	X	X	X	XXXX	37502500	–	625	B
2.500	3.375	0.481	0.688	2.502	3.373	X				X		XXXX	43702500	–	625	B
2.500	3.500	0.550	0.825	2.502	3.498	X	X	X		X		XXXX	50002500	–	750	B
2.500	3.750	0.688	1.100	2.503	3.747	X						XXXX	62502500	–	1000	B
2.562	3.000	0.240	0.413	2.563	2.999	X	X					XXXX	21802562	–	375	B
2.562	3.062	0.275	0.413	2.563	3.061					X		XXXX	25002562	–	375	B
2.562	3.125	0.309	0.550	2.563	3.124	X						XXXX	28102562	–	500	B
2.562	3.187	0.343	0.550	2.564	3.185	X						XXXX	31202562	–	500	B
2.625	2.875	0.138	0.275	2.626	2.874	X						XXXX	12502625	–	250	B
2.625	3.000	0.206	0.309	2.626	2.999	X	X			X		XXXX	18702625	–	281	B
2.625	3.000	0.206	0.275	2.626	2.999				X			XXXX	18702625	–	250	B
2.625	3.000	0.206	0.343	2.626	2.999						X	XXXX	18702625	–	312	B
2.625	3.000	0.206	0.413	2.626	2.999			X	X	X		XXXX	18702625	–	375	B
2.625	3.125	0.275	0.413	2.626	3.124	X	X	X	X	X	X	XXXX	25002625	–	375	B
2.625	3.250	0.343	0.550	2.627	3.248	X	X	X	X	X	X	XXXX	31202625	–	500	B
2.625	3.375	0.413	0.688	2.627	3.373	X	X		X	X	X	XXXX	37502625	–	625	B
2.687	3.375	0.377	0.688	2.689	3.373	X						XXXX	34302687	–	625	B
2.687	3.437	0.413	0.688	2.689	3.435	X						XXXX	37502687	–	625	B
2.750	3.000	0.138	0.275	2.751	2.999	X	X			X		XXXX	12502750	–	250	B
2.750	3.125	0.206	0.206	2.751	3.124	X	X			X		XXXX	18702750	–	187	B
2.750	3.125	0.206	0.309	2.751	3.124					X		XXXX	18702750	–	281	B
2.750	3.125	0.206	0.413	2.751	3.124			X	X	X	X	XXXX	18702750	–	375	B
2.750	3.250	0.275	0.413	2.751	3.249	X	X	X	X	X	X	XXXX	25002750	–	375	B
2.750	3.375	0.343	0.550	2.752	3.373	X	X			X	X	XXXX	31202750	–	500	B
2.750	3.500	0.413	0.688	2.752	3.498	X	X	X	X	X	X	XXXX	37502750	–	625	B
2.750	3.750	0.550	0.825	2.752	3.748	X						XXXX	50002750	–	750	B
2.750	4.000	0.688	1.100	2.753	3.997	X		X		X		XXXX	62502750	–	1000	B
2.812	3.250	0.240	0.413	2.813	3.249	X	X					XXXX	21802812	–	375	B
2.812	4.062	0.688	1.100	2.815	4.059	X						XXXX	62502812	–	1000	B
2.875	3.125	0.138	0.275	2.876	3.124	X						XXXX	12502875	–	250	B
2.875	3.250	0.206	0.206	2.876	3.249	X	X				X	XXXX	18702875	–	187	B
2.875	3.250	0.206	0.275	2.876	3.249				X			XXXX	18702875	–	250	B
2.875	3.250	0.206	0.309	2.876	3.249					X		XXXX	18702875	–	281	B
2.875	3.250	0.206	0.413	2.876	3.249				X	X	X	XXXX	18702875	–	375	B
2.875	3.375	0.275	0.413	2.876	3.374	X	X		X	X	X	XXXX	25002875	–	375	B
2.875	3.500	0.343	0.550	2.877	3.498	X	X		X	X	X	XXXX	31202875	–	500	B
2.875	3.625	0.413	0.688	2.877	3.623	X	X		X	X		XXXX	37502875	–	625	B
2.875	3.750	0.481	0.688	2.877	3.748	X						XXXX	43702875	–	625	B
2.875	3.875	0.550	0.825	2.877	3.873	X						XXXX	50002875	–	750	B

†For plastic compounds, see Table 3-1, page 3-11. For rubber compounds, see Table 3-3, page 3-14.

*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.

For custom groove calculations, see Appendix C.

Table 6-8. Standard, Deep and Type B PolyPak Gland Dimensions — Inch (Continued)

A	B	C		D	E	Compound Codes (X = Standard Offering) [†]						Part Number				
Rod Diameter	(Rod) Groove Diameter	(Std. PP) Groove Width	(Deep & B) Groove Width	Throat Diameter*	Piston Diameter**	Standard PP		Deep PP		Type B		Compound Code		Energizer Code	Add to the part number for Type B or Deep only	Add to the part number for Type B only
(Bore) Groove Diameter	Bore Diameter					Plastic	Rubber	Plastic	Rubber	Plastic	Rubber					
2.875	4.000	0.618	0.963	2.877	3.998			X				XXXX	56202875	—	875	B
2.875	4.125	0.688	1.100	2.878	4.122					X		XXXX	62502875	—	1000	B
3.000	3.250	0.138	0.275	3.001	3.249	X		X				XXXX	12503000	—	250	B
3.000	3.375	0.206	0.275	3.001	3.374	X	X			X		XXXX	18703000	—	250	B
3.000	3.375	0.206	0.413	3.001	3.374			X	X	X	X	XXXX	18703000	—	375	B
3.000	3.437	0.240	0.240	3.001	3.436	X	X				X	XXXX	21803000	—	218	B
3.000	3.437	0.240	0.320	3.001	3.436					X		XXXX	21803000	—	291	B
3.000	3.437	0.240	0.343	3.001	3.436					X		XXXX	21803000	—	312	B
3.000	3.500	0.275	0.275	3.001	3.499	X	X			X		XXXX	25003000	—	250	B
3.000	3.500	0.275	0.413	3.001	3.499			X	X	X	X	XXXX	25003000	—	375	B
3.000	3.625	0.343	0.550	3.002	3.623	X	X	X	X	X	X	XXXX	31203000	—	500	B
3.000	3.750	0.413	0.550	3.002	3.748	X	X			X	X	XXXX	37503000	—	500	B
3.000	3.750	0.413	0.688	3.002	3.748	X		X	X	X	X	XXXX	37503000	—	625	B
3.000	3.875	0.481	0.756	3.002	3.873	X		X				XXXX	43703000	—	687	B
3.000	4.000	0.550	0.825	3.002	3.998	X		X		X	X	XXXX	50003000	—	750	B
3.000	4.250	0.688	1.100	3.003	4.247	X						XXXX	62503000	—	1000	B
3.062	3.500	0.240	0.413	3.063	3.499	X						XXXX	21803062	—	375	B
3.125	3.500	0.206	0.206	3.126	3.499	X	X			X		XXXX	18703125	—	187	B
3.125	3.500	0.206	0.343	3.126	3.499					X		XXXX	18703125	—	312	B
3.125	3.500	0.206	0.413	3.126	3.499			X	X	X	X	XXXX	18703125	—	375	B
3.125	3.625	0.275	0.413	3.126	3.624	X	X	X		X	X	XXXX	25003125	—	375	B
3.125	3.750	0.343	0.413	3.127	3.748	X	X				X	XXXX	31203125	—	375	B
3.125	3.750	0.343	0.550	3.127	3.748				X		X	XXXX	31203125	—	500	B
3.125	3.875	0.413	0.688	3.127	3.873	X				X		XXXX	37503125	—	625	B
3.125	4.000	0.481	0.688	3.127	3.998	X						XXXX	43703125	—	625	B
3.250	3.500	0.138	0.275	3.251	3.499	X						XXXX	12503250	—	250	B
3.250	3.625	0.206	0.275	3.251	3.624				X			XXXX	18703250	—	250	B
3.250	3.625	0.206	0.413	3.251	3.624	X	X	X		X	X	XXXX	18703250	—	375	B
3.250	3.750	0.275	0.275	3.251	3.749	X	X			X		XXXX	25003250	—	250	B
3.250	3.750	0.275	0.413	3.251	3.749			X	X	X	X	XXXX	25003250	—	375	B
3.250	3.875	0.343	0.550	3.252	3.873	X	X	X	X	X	X	XXXX	31203250	—	500	B
3.250	4.000	0.413	0.550	3.252	3.998	X	X			X		XXXX	37503250	—	500	B
3.250	4.000	0.413	0.688	3.252	3.998			X	X	X	X	XXXX	37503250	—	625	B
3.250	4.125	0.481	0.688	3.252	4.123	X						XXXX	43703250	—	625	B
3.250	4.250	0.550	0.825	3.252	4.248	X				X		XXXX	50003250	—	750	B
3.250	4.500	0.688	1.100	3.253	4.497	X				X		XXXX	62503250	—	1000	B
3.375	3.750	0.206	0.206	3.376	3.749	X				X		XXXX	18703375	—	187	B
3.375	3.750	0.206	0.275	3.376	3.749		X			X		XXXX	18703375	—	250	B
3.375	3.750	0.206	0.413	3.376	3.749			X		X	X	XXXX	18703375	—	375	B
3.375	3.875	0.275	0.413	3.376	3.874	X	X	X	X	X	X	XXXX	25003375	—	375	B
3.375	4.000	0.343	0.343	3.377	3.998	X	X			X		XXXX	31203375	—	312	B
3.375	4.000	0.343	0.550	3.377	3.998			X	X	X	X	XXXX	31203375	—	500	B

[†]For plastic compounds, see Table 3-1, page 3-11. For rubber compounds, see Table 3-3, page 3-14.

*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.

For custom groove calculations, see Appendix C.

Standard, Deep and Type B PolyPak Profile

Table 6-8. Standard, Deep and Type B PolyPak Gland Dimensions — Inch (Continued)

A	B	C		D	E	Compound Codes (X = Standard Offering)†						Part Number				
Rod Diameter	(Rod) Groove Diameter	(Std. PP) Groove Width	(Deep & B) Groove Width	Throat Diameter*	Piston Diameter**	Standard PP		Deep PP		Type B		Compound Code		Energizer Code	Add to the part number for Type B or Deep only	Add to the part number for Type B only
(Bore) Groove Diameter	Bore Diameter			Plastic		Rubber	Plastic	Rubber	Plastic	Rubber						
3.375	4.125	0.413	0.688	3.377	4.123	X				X		XXXX	37503375	–	625	B
3.375	4.375	0.550	0.688	3.377	4.373					X		XXXX	50003375	–	625	B
3.375	4.625	0.688	1.100	3.378	4.622	X						XXXX	62503375	–	1000	B
3.437	3.875	0.240	0.413	3.438	3.874	X						XXXX	21803437	–	375	B
3.500	3.750	0.138	0.275	3.501	3.749	X						XXXX	12503500	–	250	B
3.500	3.875	0.206	0.293	3.501	3.874	X	X			X		XXXX	18703500	–	266	B
3.500	3.875	0.206	0.309	3.501	3.874					X		XXXX	18703500	–	281	B
3.500	3.875	0.206	0.413	3.501	3.874			X	X	X	X	XXXX	18703500	–	375	B
3.500	4.000	0.275	0.275	3.501	3.999	X	X				X	XXXX	25003500	–	250	B
3.500	4.000	0.275	0.362	3.501	3.999						X	XXXX	25003500	–	329	B
3.500	4.000	0.275	0.413	3.501	3.999			X	X	X	X	XXXX	25003500	–	375	B
3.500	4.125	0.343	0.550	3.502	4.123	X	X	X		X	X	XXXX	31203500	–	500	B
3.500	4.250	0.413	0.688	3.502	4.248	X	X	X	X	X	X	XXXX	37503500	–	625	B
3.500	4.500	0.550	0.825	3.502	4.498	X	X	X		X	X	XXXX	50003500	–	750	B
3.500	4.750	0.688	1.100	3.503	4.747	X						XXXX	62503500	–	1000	B
3.500	5.000	0.825	1.375	3.503	4.997	X						XXXX	75003500	–	1250	B
3.625	3.875	0.138	0.206	3.626	3.874					X		XXXX	12503625	–	187	B
3.625	4.000	0.206	0.413	3.626	3.999	X	X	X		X	X	XXXX	18703625	–	375	B
3.625	4.125	0.275	0.413	3.626	4.124	X	X	X	X	X		XXXX	25003625	–	375	B
3.625	4.250	0.343	0.550	3.627	4.248	X	X		X	X	X	XXXX	31203625	–	500	B
3.625	4.375	0.413	0.688	3.627	4.373	X				X	X	XXXX	37503625	–	625	B
3.625	4.500	0.481	0.688	3.627	4.498	X						XXXX	43703625	–	625	B
3.625	4.625	0.550	0.825	3.627	4.623			X				XXXX	50003625	–	750	B
3.687	4.250	0.309	0.413	3.688	4.249			X				XXXX	28103687	–	375	B
3.750	4.125	0.206	0.275	3.751	4.124				X			XXXX	18703750	–	250	B
3.750	4.125	0.206	0.413	3.751	4.124	X	X	X		X	X	XXXX	18703750	–	375	B
3.750	4.250	0.275	0.413	3.751	4.249	X	X	X	X	X	X	XXXX	25003750	–	375	B
3.750	4.250	0.275	0.618	3.751	4.249					X		XXXX	25003750	–	562	B
3.750	4.375	0.343	0.413	3.752	4.373	X	X			X		XXXX	31203750	–	375	B
3.750	4.375	0.343	0.550	3.752	4.373					X	X	XXXX	31203750	–	500	B
3.750	4.375	0.343	0.688	3.752	4.373					X		XXXX	31203750	–	625	B
3.750	4.500	0.413	0.550	3.752	4.498				X			XXXX	37503750	–	500	B
3.750	4.500	0.413	0.688	3.752	4.498	X	X	X	X	X	X	XXXX	37503750	–	625	B
3.750	4.750	0.550	0.759	3.752	4.748	X	X	X		X		XXXX	50003750	–	690	B
3.750	5.000	0.688	1.100	3.753	4.997	X	X			X		XXXX	62503750	–	1000	B
3.875	4.250	0.206	0.413	3.876	4.249	X	X			X		XXXX	18703875	–	375	B
3.875	4.375	0.275	0.413	3.876	4.374	X	X	X			X	XXXX	25003875	–	375	B
3.875	4.500	0.343	0.550	3.877	4.498	X	X	X		X	X	XXXX	31203875	–	500	B
3.875	4.625	0.413	0.688	3.877	4.623	X	X			X	X	XXXX	37503875	–	625	B
3.875	4.750	0.481	0.825	3.877	4.748					X		XXXX	43703875	–	750	B
3.875	4.875	0.550	0.825	3.877	4.873					X	X	XXXX	50003875	–	750	B
3.937	4.500	0.309	0.550	3.938	4.499					X		XXXX	28103937	–	500	B

†For plastic compounds, see Table 3-1, page 3-11. For rubber compounds, see Table 3-3, page 3-14.

*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.

For custom groove calculations, see Appendix C.

Table 6-8. Standard, Deep and Type B PolyPak Gland Dimensions — Inch (Continued)

A	B	C		D	E	Compound Codes (X = Standard Offering) [†]						Part Number				
Rod Diameter	(Rod) Groove Diameter	(Std. PP) Groove Width	(Deep & B) Groove Width	Throat Diameter*	Piston Diameter**	Standard PP		Deep PP		Type B		Compound Code		Energizer Code	Add to the part number for Type B or Deep only	Add to the part number for Type B only
(Bore) Groove Diameter	Bore Diameter					Plastic	Rubber	Plastic	Rubber	Plastic	Rubber					
4.000	4.250	0.138	0.275	4.001	4.249	X						XXXX	12504000	—	250	B
4.000	4.375	0.206	0.206	4.001	4.374	X	X			X		XXXX	18704000	—	187	B
4.000	4.375	0.206	0.413	4.001	4.374			X		X	X	XXXX	18704000	—	375	B
4.000	4.500	0.275	0.275	4.001	4.499	X	X				X	XXXX	25004000	—	250	B
4.000	4.500	0.275	0.413	4.001	4.499			X	X	X	X	XXXX	25004000	—	375	B
4.000	4.500	0.275	0.618	4.001	4.499			X	X	X	X	XXXX	25004000	—	562	B
4.000	4.625	0.343	0.550	4.002	4.623			X				XXXX	31204000	—	500	B
4.000	4.625	0.343	0.618	4.002	4.623	X	X	X		X	X	XXXX	31204000	—	562	B
4.000	4.750	0.413	0.550	4.002	4.748	X	X				X	XXXX	37504000	—	500	B
4.000	4.750	0.413	0.688	4.002	4.748			X	X	X	X	XXXX	37504000	—	625	B
4.000	4.875	0.481	0.688	4.002	4.873	X	X	X		X		XXXX	43704000	—	625	B
4.000	4.875	0.481	0.825	4.002	4.873						X	XXXX	43704000	—	750	B
4.000	5.000	0.550	0.825	4.002	4.998	X	X	X		X	X	XXXX	50004000	—	750	B
4.000	5.250	0.688	1.100	4.003	5.247	X						XXXX	62504000	—	1000	B
4.000	5.500	0.825	1.375	4.003	5.497	X						XXXX	75004000	—	1250	B
4.062	4.562	0.275	0.413	4.063	4.561					X		XXXX	25004062	—	375	B
4.125	4.500	0.206	0.413	4.126	4.499	X	X	X	X	X	X	XXXX	18704125	—	375	B
4.125	4.625	0.275	0.618	4.126	4.624	X	X			X	X	XXXX	25004125	—	562	B
4.125	4.750	0.343	0.618	4.127	4.748	X		X	X	X		XXXX	31204125	—	562	B
4.125	4.875	0.413	0.688	4.127	4.873	X				X	X	XXXX	37504125	—	625	B
4.125	5.125	0.550	0.825	4.127	5.123	X				X		XXXX	50004125	—	750	B
4.125	5.250	0.618	0.963	4.127	5.248	X						XXXX	56204125	—	875	B
4.250	4.500	0.138	0.275	4.251	4.499	X						XXXX	12504250	—	250	B
4.250	4.625	0.206	0.275	4.251	4.624				X			XXXX	18704250	—	250	B
4.250	4.625	0.206	0.309	4.251	4.624	X	X			X		XXXX	18704250	—	281	B
4.250	4.625	0.206	0.413	4.251	4.624			X	X	X		XXXX	18704250	—	375	B
4.250	4.750	0.275	0.413	4.251	4.749	X	X		X	X	X	XXXX	25004250	—	375	B
4.250	4.750	0.275	0.618	4.251	4.749			X	X	X	X	XXXX	25004250	—	562	B
4.250	4.875	0.343	0.618	4.252	4.873	X	X	X		X	X	XXXX	31204250	—	562	B
4.250	5.000	0.413	0.413	4.252	4.998	X	X			X		XXXX	37504250	—	375	B
4.250	5.000	0.413	0.550	4.252	4.998			X	X			XXXX	37504250	—	500	B
4.250	5.000	0.413	0.688	4.252	4.998			X	X	X	X	XXXX	37504250	—	625	B
4.250	5.250	0.550	0.825	4.252	5.248	X				X		XXXX	50004250	—	750	B
4.250	5.500	0.688	1.100	4.253	5.497	X				X		XXXX	62504250	—	1000	B
4.250	5.750	0.825	1.375	4.253	5.747	X						XXXX	75004250	—	1250	B
4.312	5.312	0.550	0.825	4.314	5.310	X						XXXX	50004312	—	750	B
4.375	4.625	0.138	0.275	4.376	4.624	X						XXXX	12504375	—	250	B
4.375	4.750	0.206	0.413	4.376	4.749	X		X		X		XXXX	18704375	—	375	B
4.375	4.875	0.275	0.618	4.376	4.874	X	X	X	X		X	XXXX	25004375	—	562	B
4.375	5.000	0.343	0.343	4.377	4.998	X	X			X		XXXX	31204375	—	312	B
4.375	5.000	0.343	0.550	4.377	4.998			X	X			XXXX	31204375	—	500	B
4.375	5.000	0.343	0.618	4.377	4.998			X		X		XXXX	31204375	—	562	B

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[†]For plastic compounds, see Table 3-1, page 3-11. For rubber compounds, see Table 3-3, page 3-14.

*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.

For custom groove calculations, see Appendix C.

Standard, Deep and Type B PolyPak Profile

Table 6-8. Standard, Deep and Type B PolyPak Gland Dimensions — Inch (Continued)

A	B	C		D	E	Compound Codes (X = Standard Offering)†						Part Number				
Rod Diameter	(Rod) Groove Diameter	(Std. PP) Groove Width	(Deep & B) Groove Width	Throat Diameter*	Piston Diameter**	Standard PP		Deep PP		Type B		Compound Code		Energizer Code	Add to the part number for Type B or Deep only	Add to the part number for Type B only
(Bore) Groove Diameter	Bore Diameter			Plastic		Rubber	Plastic	Rubber	Plastic	Rubber						
4.375	5.125	0.413	0.688	4.377	5.123	X	X	X		X	X	XXXX	37504375	–	625	B
4.375	5.375	0.550	0.688	4.377	5.373	X				X		XXXX	50004375	–	625	B
4.375	5.375	0.550	0.825	4.377	5.373			X		X		XXXX	50004375	–	750	B
4.397	5.147	0.413	0.688	4.399	5.145					X		XXXX	37504397	–	625	B
4.416	4.916	0.275	0.618	4.417	4.915					X		XXXX	25004416	–	562	B
4.437	4.937	0.275	0.413	4.438	4.936					X		XXXX	25004437	–	375	B
4.437	5.000	0.309	0.550	4.438	4.999	X						XXXX	28104437	–	500	B
4.500	4.750	0.138	0.206	4.501	4.749	X				X		XXXX	12504500	–	187	B
4.500	4.875	0.206	0.206	4.501	4.874	X				X		XXXX	18704500	–	187	B
4.500	4.875	0.206	0.413	4.501	4.874			X		X	X	XXXX	18704500	–	375	B
4.500	5.000	0.275	0.275	4.501	4.999	X	X			X	X	XXXX	25004500	–	250	B
4.500	5.000	0.275	0.413	4.501	4.999				X	X	X	XXXX	25004500	–	375	B
4.500	5.000	0.275	0.550	4.501	4.999					X	X	XXXX	25004500	–	500	B
4.500	5.000	0.275	0.618	4.501	4.999			X	X	X	X	XXXX	25004500	–	562	B
4.500	5.125	0.343	0.618	4.502	5.123	X	X			X		XXXX	31204500	–	562	B
4.500	5.125	0.343	0.688	4.502	5.123				X	X		XXXX	31204500	–	625	B
4.500	5.250	0.413	0.688	4.502	5.248	X	X	X	X	X	X	XXXX	37504500	–	625	B
4.500	5.375	0.481	0.825	4.502	5.373	X				X	X	XXXX	43704500	–	750	B
4.500	5.500	0.550	0.825	4.502	5.498	X	X	X		X	X	XXXX	50004500	–	750	B
4.500	5.750	0.688	1.100	4.503	5.747	X						XXXX	62504500	–	1000	B
4.500	6.000	0.825	1.375	4.503	5.997	X						XXXX	75004500	–	1250	B
4.625	5.000	0.206	0.413	4.626	4.999	X		X				XXXX	18704625	–	375	B
4.625	5.125	0.275	0.618	4.626	5.124	X	X			X	X	XXXX	25004625	–	562	B
4.625	5.250	0.343	0.688	4.627	5.248			X	X	X		XXXX	31204625	–	625	B
4.625	5.375	0.413	0.688	4.627	5.373	X				X	X	XXXX	37504625	–	625	B
4.625	5.875	0.688	1.100	4.628	5.872	X						XXXX	62504625	–	1000	B
4.687	5.250	0.309	0.688	4.688	5.249					X		XXXX	28104687	–	625	B
4.750	5.000	0.138	0.275	4.751	4.999	X						XXXX	12504750	–	250	B
4.750	5.125	0.206	0.413	4.751	5.124	X						XXXX	18704750	–	375	B
4.750	5.250	0.275	0.413	4.751	5.249	X	X			X		XXXX	25004750	–	375	B
4.750	5.250	0.275	0.618	4.751	5.249			X	X	X	X	XXXX	25004750	–	562	B
4.750	5.375	0.343	0.688	4.752	5.373	X			X	X		XXXX	31204750	–	625	B
4.750	5.500	0.413	0.550	4.752	5.498			X				XXXX	37504750	–	500	B
4.750	5.500	0.413	0.688	4.752	5.498	X	X	X	X	X	X	XXXX	37504750	–	625	B
4.750	5.625	0.481	0.688	4.752	5.623			X	X			XXXX	43704750	–	625	B
4.750	5.625	0.481	0.825	4.752	5.623	X	X			X		XXXX	43704750	–	750	B
4.750	5.750	0.550	0.756	4.752	5.748			X				XXXX	50004750	–	687	B
4.750	5.750	0.550	0.825	4.752	5.748	X				X		XXXX	50004750	–	750	B
4.750	6.000	0.688	1.100	4.753	5.997	X		X				XXXX	62504750	–	1000	B
4.750	6.250	0.825	1.375	4.753	6.247			X				XXXX	75004750	–	1250	B
4.875	5.250	0.206	0.413	4.876	5.249	X						XXXX	18704875	–	375	B
4.875	5.250	0.206	0.618	4.876	5.249			X				XXXX	18704875	–	562	B

†For plastic compounds, see Table 3-1, page 3-11. For rubber compounds, see Table 3-3, page 3-14.

*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.

For custom groove calculations, see Appendix C.

Table 6-8. Standard, Deep and Type B PolyPak Gland Dimensions — Inch (Continued)

A	B	C		D	E	Compound Codes (X = Standard Offering)†						Part Number				
Rod Diameter	(Rod) Groove Diameter	(Std. PP) Groove Width	(Deep & B) Groove Width	Throat Diameter*	Piston Diameter**	Standard PP		Deep PP		Type B		Compound Code		Energizer Code	Add to the part number for Type B or Deep only	Add to the part number for Type B only
(Bore) Groove Diameter	Bore Diameter					Plastic	Rubber	Plastic	Rubber	Plastic	Rubber					
4.875	5.375	0.275	0.413	4.876	5.374	X	X			X	X	XXXX	25004875	—	375	B
4.875	5.375	0.275	0.618	4.876	5.374			X	X	X	X	XXXX	25004875	—	562	B
4.875	5.500	0.343	0.343	4.877	5.498	X						XXXX	31204875	—	312	B
4.875	5.500	0.343	0.688	4.877	5.498					X		XXXX	31204875	—	625	B
4.875	5.625	0.413	0.688	4.877	5.623	X				X	X	XXXX	37504875	—	625	B
4.875	5.750	0.481	0.618	4.877	5.748					X		XXXX	43704875	—	562	B
4.875	5.875	0.550	0.618	4.877	5.873			X				XXXX	50004875	—	562	B
4.937	5.500	0.309	0.377	4.938	5.499					X		XXXX	28104937	—	343	B
4.937	5.500	0.309	0.550	4.938	5.499					X		XXXX	28104937	—	500	B
5.000	5.250	0.138	0.275	5.001	5.249	X						XXXX	12505000	—	250	B
5.000	5.375	0.206	0.309	5.001	5.374					X		XXXX	18705000	—	281	B
5.000	5.375	0.206	0.413	5.001	5.374			X			X	XXXX	18705000	—	375	B
5.000	5.500	0.275	0.413	5.001	5.499	X	X	X	X	X	X	XXXX	25005000	—	375	B
5.000	5.500	0.275	0.618	5.001	5.499			X	X	X	X	XXXX	25005000	—	562	B
5.000	5.562	0.309	0.381	5.001	5.561	X	X				X	XXXX	28105000	—	346	B
5.000	5.625	0.343	0.688	5.002	5.623	X	X			X	X	XXXX	31205000	—	625	B
5.000	5.750	0.413	0.413	5.002	5.748	X	X				X	XXXX	37505000	—	375	B
5.000	5.750	0.413	0.550	5.002	5.748					X		XXXX	37505000	—	500	B
5.000	5.750	0.413	0.688	5.002	5.748	X		X	X	X	X	XXXX	37505000	—	625	B
5.000	5.875	0.481	0.825	5.002	5.873					X	X	XXXX	43705000	—	750	B
5.000	6.000	0.550	0.825	5.002	5.998	X	X		X	X	X	XXXX	50005000	—	750	B
5.000	6.250	0.688	1.100	5.003	6.247	X				X		XXXX	62505000	—	1000	B
5.000	6.500	0.825	1.375	5.003	6.497	X						XXXX	75005000	—	1250	B
5.000	7.000	1.100	1.650	5.004	6.996			X				XXXX	100005000	—	1500	B
5.125	5.625	0.275	0.618	5.126	5.624	X	X		X			XXXX	25005125	—	562	B
5.125	5.750	0.343	0.688	5.127	5.748	X	X	X		X		XXXX	31205125	—	625	B
5.125	5.875	0.413	0.688	5.127	5.873	X				X		XXXX	37505125	—	625	B
5.125	6.000	0.481	0.550	5.127	5.998	X		X				XXXX	43705125	—	500	B
5.125	6.125	0.550	0.825	5.127	6.123	X		X				XXXX	50005125	—	750	B
5.250	5.625	0.206	0.413	5.251	5.624	X						XXXX	18705250	—	375	B
5.250	5.750	0.275	0.413	5.251	5.749	X	X	X		X		XXXX	25005250	—	375	B
5.250	5.750	0.275	0.618	5.251	5.749			X	X	X		XXXX	25005250	—	562	B
5.250	5.875	0.343	0.550	5.252	5.873	X	X				X	XXXX	31205250	—	500	B
5.250	5.875	0.343	0.688	5.252	5.873					X		XXXX	31205250	—	625	B
5.250	6.000	0.413	0.413	5.252	5.998	X	X			X		XXXX	37505250	—	375	B
5.250	6.000	0.413	0.550	5.252	5.998			X		X		XXXX	37505250	—	500	B
5.250	6.000	0.413	0.688	5.252	5.998			X	X	X	X	XXXX	37505250	—	625	B
5.250	6.250	0.550	0.550	5.252	6.248	X				X		XXXX	50005250	—	500	B
5.250	6.250	0.550	0.825	5.252	6.248					X		XXXX	50005250	—	750	B
5.250	6.500	0.688	1.100	5.253	6.497					X		XXXX	62505250	—	1000	B
5.375	5.875	0.275	0.413	5.376	5.874	X	X			X	X	XXXX	25005375	—	375	B
5.375	5.875	0.275	0.618	5.376	5.874					X		XXXX	25005375	—	562	B

†For plastic compounds, see Table 3-1, page 3-11. For rubber compounds, see Table 3-3, page 3-14.

*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.

For custom groove calculations, see Appendix C.

Standard, Deep and Type B PolyPak Profile

Table 6-8. Standard, Deep and Type B PolyPak Gland Dimensions — Inch (Continued)

A	B	C		D	E	Compound Codes (X = Standard Offering)†						Part Number				
Rod Diameter	(Rod) Groove Diameter	(Std. PP) Groove Width	(Deep & B) Groove Width	Throat Diameter*	Piston Diameter**	Standard PP		Deep PP		Type B		Compound Code		Energizer Code	Add to the part number for Type B or Deep only	Add to the part number for Type B only
(Bore) Groove Diameter	Bore Diameter			Plastic		Rubber	Plastic	Rubber	Plastic	Rubber						
5.375	6.000	0.343	0.688	5.377	5.998	X	X	X			X	XXXX	31205375	–	625	B
5.375	6.125	0.413	0.688	5.377	6.123	X				X	X	XXXX	37505375	–	625	B
5.375	6.375	0.550	0.825	5.377	6.373	X		X				XXXX	50005375	–	750	B
5.437	6.000	0.309	0.550	5.438	5.999	X	X					XXXX	28105437	–	500	B
5.437	6.437	0.550	0.825	5.439	6.435	X						XXXX	50005437	–	750	B
5.500	5.875	0.206	0.413	5.501	5.874					X		XXXX	18705500	–	375	B
5.500	6.000	0.275	0.413	5.501	5.999	X	X	X	X	X	X	XXXX	25005500	–	375	B
5.500	6.000	0.275	0.618	5.501	5.999			X		X	X	XXXX	25005500	–	562	B
5.500	6.125	0.343	0.343	5.502	6.123	X	X				X	XXXX	31205500	–	312	B
5.500	6.125	0.343	0.413	5.502	6.123						X	XXXX	31205500	–	374	B
5.500	6.125	0.343	0.550	5.502	6.123						X	XXXX	31205500	–	500	B
5.500	6.125	0.343	0.688	5.502	6.123			X		X		XXXX	31205500	–	625	B
5.500	6.250	0.413	0.688	5.502	6.248	X	X	X	X	X	X	XXXX	37505500	–	625	B
5.500	6.375	0.481	0.825	5.502	6.373	X						XXXX	43705500	–	750	B
5.500	6.500	0.550	0.825	5.502	6.498	X	X	X	X	X	X	XXXX	50005500	–	750	B
5.500	6.625	0.618	0.963	5.502	6.623	X						XXXX	56205500	–	875	B
5.500	6.750	0.688	1.100	5.503	6.747	X		X		X		XXXX	62505500	–	1000	B
5.500	7.000	0.825	1.375	5.503	6.997	X						XXXX	75005500	–	1250	B
5.625	6.125	0.275	0.618	5.626	6.124	X	X			X	X	XXXX	25005625	–	562	B
5.625	6.250	0.343	0.688	5.627	6.248				X	X		XXXX	31205625	–	625	B
5.625	6.375	0.413	0.688	5.627	6.373	X	X	X		X	X	XXXX	37505625	–	625	B
5.687	6.062	0.206	0.413	5.688	6.061	X						XXXX	18705687	–	375	B
5.750	6.000	0.138	0.275	5.751	5.999	X						XXXX	12505750	–	250	B
5.750	6.250	0.275	0.413	5.751	6.249	X	X				X	XXXX	25005750	–	375	B
5.750	6.250	0.275	0.618	5.751	6.249			X	X	X	X	XXXX	25005750	–	562	B
5.750	6.375	0.343	0.688	5.752	6.373					X		XXXX	31205750	–	625	B
5.750	6.500	0.413	0.550	5.752	6.498			X				XXXX	37505750	–	500	B
5.750	6.500	0.413	0.688	5.752	6.498	X		X		X	X	XXXX	37505750	–	625	B
5.750	6.750	0.550	0.825	5.752	6.748	X				X	X	XXXX	50005750	–	750	B
5.750	7.000	0.688	1.100	5.753	6.997	X	X					XXXX	62505750	–	1000	B
5.812	6.312	0.275	0.413	5.813	6.311				X			XXXX	25005812	–	375	B
5.875	6.250	0.206	0.413	5.876	6.249	X						XXXX	18705875	–	375	B
5.875	6.375	0.275	0.413	5.876	6.374	X					X	XXXX	25005875	–	375	B
5.875	6.375	0.275	0.618	5.876	6.374			X				XXXX	25005875	–	562	B
5.875	6.500	0.343	0.343	5.877	6.498	X					X	XXXX	31205875	–	312	B
5.875	6.500	0.343	0.688	5.877	6.498						X	XXXX	31205875	–	625	B
5.875	6.625	0.413	0.688	5.877	6.623	X	X			X		XXXX	37505875	–	625	B
5.937	6.500	0.309	0.550	5.938	6.499					X		XXXX	28105937	–	500	B
6.000	6.375	0.206	0.413	6.001	6.374	X		X				XXXX	18706000	–	375	B
6.000	6.500	0.275	0.413	6.001	6.499	X	X			X	X	XXXX	25006000	–	375	B
6.000	6.500	0.275	0.481	6.001	6.499					X		XXXX	25006000	–	437	B
6.000	6.500	0.275	0.618	6.001	6.499			X	X	X	X	XXXX	25006000	–	562	B

†For plastic compounds, see Table 3-1, page 3-11. For rubber compounds, see Table 3-3, page 3-14.

*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.

For custom groove calculations, see Appendix C.

Table 6-8. Standard, Deep and Type B PolyPak Gland Dimensions — Inch (Continued)

A	B	C		D	E	Compound Codes (X = Standard Offering) [†]						Part Number				
Rod Diameter	(Rod) Groove Diameter	(Std. PP) Groove Width	(Deep & B) Groove Width	Throat Diameter*	Piston Diameter**	Standard PP		Deep PP		Type B		Compound Code		Energizer Code	Add to the part number for Type B or Deep only	Add to the part number for Type B only
(Bore) Groove Diameter	Bore Diameter					Plastic	Rubber	Plastic	Rubber	Plastic	Rubber					
6.000	6.625	0.343	0.688	6.002	6.623	X				X		XXXX	31206000	—	625	B
6.000	6.750	0.413	0.550	6.002	6.748	X	X			X		XXXX	37506000	—	500	B
6.000	6.750	0.413	0.688	6.002	6.748			X	X	X	X	XXXX	37506000	—	625	B
6.000	7.000	0.550	0.825	6.002	6.998		X	X	X	X	X	XXXX	50006000	—	750	B
6.000	7.250	0.688	1.100	6.003	7.247	X				X		XXXX	62506000	—	1000	B
6.000	7.500	0.825	1.375	6.003	7.497	X						XXXX	75006000	—	1250	B
6.000	8.000	1.100	1.650	6.004	7.996	X						XXXX	100006000	—	1500	B
6.125	6.625	0.275	0.413	6.126	6.624	X						XXXX	25006125	—	375	B
6.125	6.750	0.343	0.688	6.127	6.748	X					X	XXXX	31206125	—	625	B
6.250	6.750	0.275	0.413	6.251	6.749	X	X				X	XXXX	25006250	—	375	B
6.250	6.750	0.275	0.618	6.251	6.749			X		X	X	XXXX	25006250	—	562	B
6.250	7.000	0.413	0.550	6.252	6.998	X	X	X		X		XXXX	37506250	—	500	B
6.250	7.000	0.413	0.688	6.252	6.998			X	X	X	X	XXXX	37506250	—	625	B
6.250	7.250	0.550	0.825	6.252	7.248	X	X			X	X	XXXX	50006250	—	750	B
6.250	7.500	0.688	1.100	6.253	7.497	X						XXXX	62506250	—	1000	B
6.250	7.750	0.825	1.375	6.253	7.747			X				XXXX	75006250	—	1250	B
6.312	6.687	0.206	0.413	6.313	6.686	X						XXXX	18706312	—	375	B
6.375	7.000	0.343	0.688	6.377	6.998	X	X	X		X	X	XXXX	31206375	—	625	B
6.375	7.375	0.550	0.825	6.377	7.373	X						XXXX	50006375	—	750	B
6.437	7.000	0.309	0.550	6.438	6.999	X	X					XXXX	28106437	—	500	B
6.500	7.000	0.275	0.413	6.501	6.999	X	X	X	X	X		XXXX	25006500	—	375	B
6.500	7.000	0.275	0.618	6.501	6.999			X	X	X	X	XXXX	25006500	—	562	B
6.500	7.125	0.343	0.688	6.502	7.123	X				X		XXXX	31206500	—	625	B
6.500	7.250	0.413	0.413	6.502	7.248	X	X				X	XXXX	37506500	—	375	B
6.500	7.250	0.413	0.550	6.502	7.248			X		X		XXXX	37506500	—	500	B
6.500	7.250	0.413	0.688	6.502	7.248			X		X	X	XXXX	37506500	—	625	B
6.500	7.500	0.550	0.825	6.502	7.498	X		X	X	X		XXXX	50006500	—	750	B
6.500	7.750	0.688	1.100	6.503	7.747	X		X				XXXX	62506500	—	1000	B
6.500	8.000	0.825	1.375	6.503	7.997	X		X				XXXX	75006500	—	1250	B
6.625	7.125	0.275	0.413	6.626	7.124			X	X			XXXX	25006625	—	375	B
6.625	7.250	0.343	0.688	6.627	7.248	X				X		XXXX	31206625	—	625	B
6.625	7.875	0.688	1.100	6.628	7.872	X						XXXX	62506625	—	1000	B
6.750	7.250	0.275	0.413	6.751	7.249	X	X			X	X	XXXX	25006750	—	375	B
6.750	7.250	0.275	0.618	6.751	7.249			X		X	X	XXXX	25006750	—	562	B
6.750	7.375	0.343	0.688	6.752	7.373	X				X		XXXX	31206750	—	625	B
6.750	7.500	0.413	0.413	6.752	7.498	X	X			X		XXXX	37506750	—	375	B
6.750	7.500	0.413	0.550	6.752	7.498					X		XXXX	37506750	—	500	B
6.750	7.500	0.413	0.618	6.752	7.498			X				XXXX	37506750	—	562	B
6.750	7.500	0.413	0.688	6.752	7.498			X		X	X	XXXX	37506750	—	625	B
6.750	7.750	0.550	0.825	6.752	7.748	X			X	X		XXXX	50006750	—	750	B
6.750	7.875	0.618	0.963	6.752	7.873	X						XXXX	56206750	—	875	B
6.750	8.000	0.688	1.100	6.753	7.997	X		X		X		XXXX	62506750	—	1000	B

[†]For plastic compounds, see Table 3-1, page 3-11. For rubber compounds, see Table 3-3, page 3-14.

*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.

For custom groove calculations, see Appendix C.

Standard, Deep and Type B PolyPak Profile

Table 6-8. Standard, Deep and Type B PolyPak Gland Dimensions — Inch (Continued)

A	B	C		D	E	Compound Codes (X = Standard Offering) [†]						Part Number				
Rod Diameter	(Rod) Groove Diameter	(Std. PP) Groove Width	(Deep & B) Groove Width	Throat Diameter*	Piston Diameter**	Standard PP		Deep PP		Type B		Compound Code		Energizer Code	Add to the part number for Type B or Deep only	Add to the part number for Type B only
(Bore) Groove Diameter	Bore Diameter			Plastic		Rubber	Plastic	Rubber	Plastic	Rubber						
6.875	7.625	0.413	0.688	6.877	7.623					X		XXXX	37506875	–	625	B
6.875	8.125	0.688	1.100	6.878	8.122	X						XXXX	62506875	–	1000	B
6.937	7.500	0.309	0.550	6.938	7.499					X		XXXX	28106937	–	500	B
7.000	7.375	0.206	0.413	7.001	7.374					X		XXXX	18707000	–	375	B
7.000	7.500	0.275	0.413	7.001	7.499	X	X	X		X	X	XXXX	25007000	–	375	B
7.000	7.500	0.275	0.618	7.001	7.499			X	X	X	X	XXXX	25007000	–	562	B
7.000	7.625	0.343	0.688	7.002	7.623	X				X		XXXX	31207000	–	625	B
7.000	7.750	0.413	0.550	7.002	7.748	X	X			X		XXXX	37507000	–	500	B
7.000	7.750	0.413	0.688	7.002	7.748			X		X	X	XXXX	37507000	–	625	B
7.000	8.000	0.550	0.825	7.002	7.998	X	X	X	X	X	X	XXXX	50007000	–	750	B
7.000	8.250	0.688	1.100	7.003	8.247	X				X		XXXX	62507000	–	1000	B
7.000	8.500	0.825	1.375	7.003	8.497	X	X	X				XXXX	75007000	–	1250	B
7.000	9.000	1.100	1.650	7.004	8.996	X						XXXX	100007000	–	1500	B
7.125	7.625	0.275	0.413	7.126	7.624	X			X			XXXX	25007125	–	375	B
7.187	8.000	0.447	0.688	7.189	7.998	X						XXXX	40607187	–	625	B
7.250	7.750	0.275	0.618	7.251	7.749	X	X			X	X	XXXX	25007250	–	562	B
7.250	7.875	0.343	0.688	7.252	7.873	X				X		XXXX	31207250	–	625	B
7.250	8.000	0.413	0.688	7.252	7.998	X	X	X	X	X	X	XXXX	37507250	–	625	B
7.250	8.250	0.550	0.825	7.252	8.248				X	X	X	XXXX	50007250	–	750	B
7.250	8.500	0.688	1.100	7.253	8.497					X		XXXX	62507250	–	1000	B
7.375	7.750	0.206	0.413	7.376	7.749		X					XXXX	18707375	–	375	B
7.375	8.000	0.343	0.688	7.377	7.998	X	X					XXXX	31207375	–	625	B
7.375	8.125	0.413	0.550	7.377	8.123					X		XXXX	37507375	–	500	B
7.404	8.028	0.343	0.688	7.406	8.026					X		XXXX	31207404	–	625	B
7.500	7.875	0.206	0.275	7.501	7.874			X				XXXX	18707500	–	250	B
7.500	8.000	0.275	0.618	7.501	7.999	X	X	X	X	X	X	XXXX	25007500	–	562	B
7.500	8.125	0.343	0.688	7.502	8.123	X		X				XXXX	31207500	–	625	B
7.500	8.250	0.413	0.550	7.502	8.248	X	X	X		X		XXXX	37507500	–	500	B
7.500	8.250	0.413	0.688	7.502	8.248	X		X	X	X	X	XXXX	37507500	–	625	B
7.500	8.500	0.550	0.825	7.502	8.498	X		X		X		XXXX	50007500	–	750	B
7.500	8.750	0.688	1.100	7.503	8.747					X		XXXX	62507500	–	1000	B
7.500	9.000	0.825	1.375	7.503	8.997	X		X				XXXX	75007500	–	1250	B
7.500	9.500	1.100	1.650	7.504	9.496	X						XXXX	100007500	–	1500	B
7.625	8.250	0.343	0.550	7.627	8.248			X				XXXX	31207625	–	500	B
7.625	8.375	0.413	0.688	7.627	8.373	X						XXXX	37507625	–	625	B
7.750	8.250	0.275	0.618	7.751	8.249	X	X	X		X		XXXX	25007750	–	562	B
7.750	8.375	0.343	0.688	7.752	8.373	X						XXXX	31207750	–	625	B
7.750	8.500	0.413	0.550	7.752	8.498	X	X	X		X		XXXX	37507750	–	500	B
7.750	8.500	0.413	0.688	7.752	8.498			X	X	X	X	XXXX	37507750	–	625	B
7.750	8.750	0.550	0.825	7.752	8.748	X				X		XXXX	50007750	–	750	B
7.750	9.000	0.688	1.100	7.753	8.997	X				X		XXXX	62507750	–	1000	B
7.790	8.540	0.413	0.413	7.792	8.538					X		XXXX	37507790	–	375	B

†For plastic compounds, see Table 3-1, page 3-11. For rubber compounds, see Table 3-3, page 3-14.

*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.

For custom groove calculations, see Appendix C.

Table 6-8. Standard, Deep and Type B PolyPak Gland Dimensions — Inch (Continued)

A	B	C		D	E	Compound Codes (X = Standard Offering) [†]						Part Number				
Rod Diameter	(Rod) Groove Diameter	(Std. PP) Groove Width	(Deep & B) Groove Width	Throat Diameter*	Piston Diameter**	Plastic	Rubber	Plastic	Rubber	Plastic	Rubber	Compound Code		Energizer Code	Add to the part number for Type B or Deep only	Add to the part number for Type B only
(Bore) Groove Diameter	Bore Diameter															
7.875	8.500	0.343	0.688	7.877	8.498	X				X		XXXX	31207875	—	625	B
7.875	8.625	0.413	0.688	7.877	8.623						X	XXXX	37507875	—	625	B
7.875	8.875	0.550	0.825	7.877	8.873					X		XXXX	50007875	—	750	B
8.000	8.500	0.275	0.618	8.001	8.499	X	X			X	X	XXXX	25008000	—	562	B
8.000	8.625	0.343	0.688	8.002	8.623	X	X			X		XXXX	31208000	—	625	B
8.000	8.750	0.413	0.550	8.002	8.748			X				XXXX	37508000	—	500	B
8.000	8.750	0.413	0.688	8.002	8.748	X	X	X		X	X	XXXX	37508000	—	625	B
8.000	9.000	0.550	0.825	8.002	8.998	X		X	X	X	X	XXXX	50008000	—	750	B
8.000	9.250	0.688	1.100	8.003	9.247	X		X				XXXX	62508000	—	1000	B
8.000	9.500	0.825	1.238	8.003	9.497	X				X		XXXX	75008000	—	1125	B
8.000	9.500	0.825	1.375	8.003	9.497					X		XXXX	75008000	—	1250	B
8.000	10.000	1.100	1.650	8.004	9.996	X						XXXX	100008000	—	1500	B
8.125	8.625	0.275	0.618	8.126	8.624					X		XXXX	25008125	—	562	B
8.187	9.437	0.688	1.100	8.190	9.434	X						XXXX	62508187	—	1000	B
8.250	8.750	0.275	0.413	8.251	8.749	X	X			X		XXXX	25008250	—	375	B
8.250	8.750	0.275	0.618	8.251	8.749					X	X	XXXX	25008250	—	562	B
8.250	9.000	0.413	0.688	8.252	8.998	X	X	X	X	X	X	XXXX	37508250	—	625	B
8.250	9.250	0.550	0.825	8.252	9.248	X		X		X		XXXX	50008250	—	750	B
8.250	9.500	0.688	1.100	8.253	9.497	X				X		XXXX	62508250	—	1000	B
8.250	9.750	0.825	1.375	8.253	9.747	X						XXXX	75008250	—	1250	B
8.375	9.000	0.343	0.688	8.377	8.998	X		X				XXXX	31208375	—	625	B
8.375	9.875	0.825	1.375	8.378	9.872	X						XXXX	75008375	—	1250	B
8.500	9.000	0.275	0.618	8.501	8.999	X	X	X		X	X	XXXX	25008500	—	562	B
8.500	9.125	0.343	0.688	8.502	9.123	X						XXXX	31208500	—	625	B
8.500	9.250	0.413	0.688	8.502	9.248	X	X			X	X	XXXX	37508500	—	625	B
8.500	9.500	0.550	0.825	8.502	9.498	X	X	X		X	X	XXXX	50008500	—	750	B
8.500	9.750	0.688	1.100	8.503	9.747	X				X		XXXX	62508500	—	1000	B
8.500	10.000	0.825	1.238	8.503	9.997	X	X			X		XXXX	75008500	—	1125	B
8.500	10.000	0.825	1.375	8.503	9.997			X				XXXX	75008500	—	1250	B
8.500	10.250	0.963	1.513	8.504	10.246	X						XXXX	87508500	—	1375	B
8.625	9.375	0.413	0.688	8.627	9.373	X						XXXX	37508625	—	625	B
8.625	9.875	0.688	1.100	8.628	9.872	X						XXXX	62508625	—	1000	B
8.750	9.250	0.275	0.618	8.751	9.249	X	X	X				XXXX	25008750	—	562	B
8.750	9.500	0.413	0.413	8.752	9.498	X	X				X	XXXX	37508750	—	375	B
8.750	9.500	0.413	0.550	8.752	9.498	X				X		XXXX	37508750	—	500	B
8.750	9.500	0.413	0.688	8.752	9.498			X	X			XXXX	37508750	—	625	B
8.750	9.500	0.413	0.825	8.752	9.498			X		X		XXXX	37508750	—	750	B
8.750	9.750	0.550	0.825	8.752	9.748	X		X		X		XXXX	50008750	—	750	B
8.750	10.000	0.688	1.100	8.753	9.997	X		X				XXXX	62508750	—	1000	B
8.795	9.545	0.413	0.413	8.797	9.543					X		XXXX	37508795	—	375	B
8.875	9.500	0.343	0.688	8.877	9.498	X						XXXX	31208875	—	625	B
8.875	9.625	0.413	0.688	8.877	9.623					X	X	XXXX	37508875	—	625	B

[†]For plastic compounds, see Table 3-1, page 3-11. For rubber compounds, see Table 3-3, page 3-14.

*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.

For custom groove calculations, see Appendix C.

Standard, Deep and Type B PolyPak Profile

Table 6-8. Standard, Deep and Type B PolyPak Gland Dimensions — Inch (Continued)

A	B	C		D	E	Compound Codes (X = Standard Offering)†						Part Number				
Rod Diameter	(Rod) Groove Diameter	(Std. PP) Groove Width	(Deep & B) Groove Width	Throat Diameter*	Piston Diameter**	Standard PP		Deep PP		Type B		Compound Code		Energizer Code	Add to the part number for Type B or Deep only	Add to the part number for Type B only
(Bore) Groove Diameter	Bore Diameter			Plastic		Rubber	Plastic	Rubber	Plastic	Rubber						
8.937	9.500	0.309	0.550	8.938	9.499					X		XXXX	28108937	–	500	B
9.000	9.500	0.275	0.413	9.001	9.499	X	X	X		X		XXXX	25009000	–	375	B
9.000	9.625	0.343	0.550	9.002	9.623			X				XXXX	31209000	–	500	B
9.000	9.750	0.413	0.688	9.002	9.748	X	X	X		X	X	XXXX	37509000	–	625	B
9.000	10.000	0.550	0.825	9.002	9.998	X	X	X	X	X	X	XXXX	50009000	–	750	B
9.000	10.250	0.688	1.100	9.003	10.247	X				X		XXXX	62509000	–	1000	B
9.000	10.500	0.825	1.375	9.003	10.497	X		X				XXXX	75009000	–	1250	B
9.125	9.750	0.343	0.688	9.127	9.748					X		XXXX	31209125	–	625	B
9.250	9.750	0.275	0.618	9.251	9.749	X	X	X				XXXX	25009250	–	562	B
9.250	9.875	0.343	0.688	9.252	9.873					X		XXXX	31209250	–	625	B
9.250	10.000	0.413	0.550	9.252	9.998			X				XXXX	37509250	–	500	B
9.250	10.000	0.413	0.688	9.252	9.998	X	X	X	X	X		XXXX	37509250	–	625	B
9.250	10.250	0.550	0.825	9.252	10.248					X		XXXX	50009250	–	750	B
9.250	10.500	0.688	1.100	9.253	10.497	X						XXXX	62509250	–	1000	B
9.312	10.000	0.377	0.688	9.314	9.998	X	X					XXXX	34309312	–	625	B
9.375	10.000	0.343	0.688	9.377	9.998					X		XXXX	31209375	–	625	B
9.500	10.000	0.275	0.413	9.501	9.999			X				XXXX	25009500	–	375	B
9.500	10.000	0.275	0.618	9.501	9.999		X	X	X	X		XXXX	25009500	–	562	B
9.500	10.125	0.343	0.688	9.502	10.123	X						XXXX	31209500	–	625	B
9.500	10.250	0.413	0.688	9.502	10.248	X				X	X	XXXX	37509500	–	625	B
9.500	10.500	0.550	0.825	9.502	10.498	X	X	X		X		XXXX	50009500	–	750	B
9.500	11.000	0.825	1.375	9.503	10.997	X						XXXX	75009500	–	1250	B
9.500	11.500	1.100	1.650	9.504	11.496	X						XXXX	10009500	–	1500	B
9.625	10.250	0.343	0.688	9.627	10.248	X				X		XXXX	31209625	–	625	B
9.625	10.375	0.413	0.688	9.627	10.373			X			X	XXXX	37509625	–	625	B
9.625	11.500	1.031	1.650	9.629	11.496			X				XXXX	93709625	–	1500	B
9.750	10.250	0.275	0.413	9.751	10.249	X	X			X		XXXX	25009750	–	375	B
9.750	10.250	0.275	0.618	9.751	10.249					X		XXXX	25009750	–	562	B
9.750	10.375	0.343	0.688	9.752	10.373					X		XXXX	31209750	–	625	B
9.750	10.500	0.413	0.688	9.752	10.498	X		X				XXXX	37509750	–	625	B
9.750	10.750	0.550	0.825	9.752	10.748	X				X		XXXX	50009750	–	750	B
9.750	11.250	0.825	1.375	9.753	11.247					X		XXXX	75009750	–	1250	B
9.750	11.500	0.963	1.513	9.754	11.496	X						XXXX	87509750	–	1375	B
9.812	11.312	0.825	1.375	9.815	11.309			X				XXXX	75009812	–	1250	B
9.875	10.625	0.413	0.688	9.877	10.623	X					X	XXXX	37509875	–	625	B
9.875	10.875	0.550	0.825	9.877	10.873			X				XXXX	50009875	–	750	B
10.000	10.500	0.275	0.618	10.001	10.499	X	X			X	X	XXXX	25010000	–	562	B
10.000	10.625	0.343	0.688	10.002	10.623	X						XXXX	31210000	–	625	B
10.000	10.750	0.413	0.688	10.002	10.748	X	X			X	X	XXXX	37510000	–	625	B
10.000	11.000	0.550	0.825	10.002	10.998	X	X	X	X	X	X	XXXX	50010000	–	750	B
10.000	11.250	0.688	1.100	10.003	11.247	X		X				XXXX	62510000	–	1000	B
10.000	11.500	0.825	1.375	10.003	11.497	X				X		XXXX	75010000	–	1250	B

†For plastic compounds, see Table 3-1, page 3-11. For rubber compounds, see Table 3-3, page 3-14.

*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.

For custom groove calculations, see Appendix C.

Table 6-8. Standard, Deep and Type B PolyPak Gland Dimensions — Inch (Continued)

A	B	C		D	E	Compound Codes (X = Standard Offering) [†]						Part Number				
Rod Diameter	(Rod) Groove Diameter	(Std. PP) Groove Width	(Deep & B) Groove Width	Throat Diameter*	Piston Diameter**	Standard PP		Deep PP		Type B		Com- pound Code		Ener- gizer Code	Add to the part number for Type B or Deep only	Add to the part number for Type B only
(Bore) Groove Diameter	Bore Diameter					Plastic	Rubber	Plastic	Rubber	Plastic	Rubber					
10.000	12.000	1.100	1.650	10.004	11.996	X						XXXX	100010000	—	1500	B
10.125	10.750	0.343	0.688	10.127	10.748	X						XXXX	31210125	—	625	B
10.125	10.875	0.413	0.688	10.127	10.873						X	XXXX	37510125	—	625	B
10.187	11.000	0.447	0.550	10.189	10.998			X				XXXX	40610187	—	500	B
10.250	10.750	0.275	0.618	10.251	10.749	X	X			X	X	XXXX	25010250	—	562	B
10.250	11.000	0.413	0.550	10.252	10.998	X	X			X		XXXX	37510250	—	500	B
10.250	11.000	0.413	0.688	10.252	10.998			X				XXXX	37510250	—	625	B
10.250	11.000	0.413	0.825	10.252	10.998					X		XXXX	37510250	—	750	B
10.250	11.250	0.550	0.825	10.252	11.248					X		XXXX	50010250	—	750	B
10.250	11.500	0.688	1.100	10.253	11.497	X						XXXX	62510250	—	1000	B
10.375	11.000	0.343	0.688	10.377	10.998					X		XXXX	31210375	—	625	B
10.500	11.000	0.275	0.550	10.501	10.999			X				XXXX	25010500	—	500	B
10.500	11.000	0.275	0.618	10.501	10.999	X				X		XXXX	25010500	—	562	B
10.500	11.125	0.343	0.550	10.502	11.123			X				XXXX	31210500	—	500	B
10.500	11.250	0.413	0.413	10.502	11.248	X				X		XXXX	37510500	—	375	B
10.500	11.250	0.413	0.688	10.502	11.248			X		X		XXXX	37510500	—	625	B
10.500	11.500	0.550	0.825	10.502	11.498	X		X		X		XXXX	50010500	—	750	B
10.500	11.750	0.688	0.825	10.503	11.747	X				X		XXXX	62510500	—	750	B
10.500	12.000	0.825	1.100	10.503	11.997	X	X			X		XXXX	75010500	—	1000	B
10.500	12.000	0.825	1.375	10.503	11.997			X				XXXX	75010500	—	1250	B
10.500	12.000	0.825	1.375	10.503	11.997	X						XXXX	75010750	—	1250	B
10.625	11.625	0.550	0.688	10.627	11.623				X			XXXX	50010625	—	625	B
10.625	11.625	0.550	0.825	10.627	11.623			X				XXXX	50010625	—	750	B
10.750	11.250	0.275	0.413	10.751	11.249	X	X					XXXX	25010750	—	375	B
10.750	11.500	0.413	0.688	10.752	11.498	X	X	X		X		XXXX	37510750	—	625	B
10.750	11.750	0.550	0.825	10.752	11.748	X		X		X		XXXX	50010750	—	750	B
11.000	11.500	0.275	0.618	11.001	11.499	X				X		XXXX	25011000	—	562	B
11.000	11.750	0.413	0.688	11.002	11.748	X						XXXX	37511000	—	625	B
11.000	12.000	0.550	0.825	11.002	11.998	X	X	X		X	X	XXXX	50011000	—	750	B
11.000	12.250	0.688	1.100	11.003	12.247	X		X		X		XXXX	62511000	—	1000	B
11.000	12.500	0.825	1.375	11.003	12.497	X		X				XXXX	75011000	—	1250	B
11.125	11.750	0.343	0.688	11.127	11.748						X	XXXX	31211125	—	625	B
11.250	11.750	0.275	0.413	11.251	11.749	X				X		XXXX	25011250	—	375	B
11.250	11.750	0.275	0.618	11.251	11.749					X		XXXX	25011250	—	562	B
11.250	12.000	0.413	0.688	11.252	11.998	X	X	X	X	X		XXXX	37511250	—	625	B
11.250	12.250	0.550	0.825	11.252	12.248	X				X		XXXX	50011250	—	750	B
11.250	12.500	0.688	1.100	11.253	12.497					X		XXXX	62511250	—	1000	B
11.375	12.375	0.550	0.825	11.377	12.373	X				X		XXXX	50011375	—	750	B
11.500	12.000	0.275	0.618	11.501	11.999	X	X			X		XXXX	25011500	—	562	B
11.500	12.250	0.413	0.688	11.502	12.248	X		X		X	X	XXXX	37511500	—	625	B
11.500	12.500	0.550	0.825	11.502	12.498	X		X	X	X		XXXX	50011500	—	750	B
11.500	12.750	0.688	1.100	11.503	12.747					X		XXXX	62511500	—	1000	B

[†]For plastic compounds, see Table 3-1, page 3-11. For rubber compounds, see Table 3-3, page 3-14.

*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.

For custom groove calculations, see Appendix C.

Standard, Deep and Type B PolyPak Profile

Table 6-8. Standard, Deep and Type B PolyPak Gland Dimensions — Inch (Continued)

A	B	C		D	E	Compound Codes (X = Standard Offering)†						Part Number				
Rod Diameter	(Rod) Groove Diameter	(Std. PP) Groove Width	(Deep & B) Groove Width	Throat Diameter*	Piston Diameter**	Standard PP		Deep PP		Type B		Compound Code		Energizer Code	Add to the part number for Type B or Deep only	Add to the part number for Type B only
(Bore) Groove Diameter	Bore Diameter			Plastic		Rubber	Plastic	Rubber	Plastic	Rubber						
11.500	13.000	0.825	1.375	11.503	12.997					X		XXXX	75011500	–	1250	B
11.750	12.250	0.275	0.413	11.751	12.249	X						XXXX	25011750	–	375	B
11.750	12.500	0.413	0.688	11.752	12.498	X				X		XXXX	37511750	–	625	B
11.750	12.500	0.413	0.825	11.752	12.498					X		XXXX	37511750	–	750	B
11.750	12.750	0.550	0.825	11.752	12.748	X				X		XXXX	50011750	–	750	B
11.750	13.000	0.688	1.100	11.753	12.997					X		XXXX	62511750	–	1000	B
11.875	12.875	0.550	0.825	11.877	12.873					X		XXXX	50011875	–	750	B
12.000	12.500	0.275	0.413	12.001	12.499	X						XXXX	25012000	–	375	B
12.000	12.625	0.343	0.688	12.002	12.623	X						XXXX	31212000	–	625	B
12.000	12.750	0.413	0.688	12.002	12.748	X				X		XXXX	37512000	–	625	B
12.000	13.000	0.550	0.825	12.002	12.998	X				X		XXXX	50012000	–	750	B
12.000	13.250	0.688	1.100	12.003	13.247	X		X		X		XXXX	62512000	–	1000	B
12.000	13.500	0.825	1.375	12.003	13.497	X				X		XXXX	75012000	–	1250	B
12.000	14.000	1.100	1.650	12.004	13.996	X				X		XXXX	100012000	–	1500	B
12.125	13.125	0.550	0.825	12.127	13.123					X		XXXX	50012125	–	750	B
12.250	12.875	0.343	0.688	12.252	12.873					X		XXXX	31212250	–	625	B
12.250	13.000	0.413	0.688	12.252	12.998	X		X		X	X	XXXX	37512250	–	625	B
12.250	13.250	0.550	0.825	12.252	13.248					X		XXXX	50012250	–	750	B
12.250	13.500	0.688	1.100	12.253	13.497	X				X		XXXX	62512250	–	1000	B
12.250	13.875	0.893	1.238	12.253	13.872			X				XXXX	81212250	–	1125	B
12.500	13.000	0.275	0.413	12.501	12.999	X						XXXX	25012500	–	375	B
12.500	13.125	0.343	0.688	12.502	13.123					X		XXXX	31212500	–	625	B
12.500	13.500	0.550	0.825	12.502	13.498		X	X		X	X	XXXX	50012500	–	750	B
12.500	13.750	0.688	1.100	12.503	13.747			X				XXXX	62512500	–	1000	B
12.500	14.000	0.825	1.375	12.503	13.997	X	X			X		XXXX	75012500	–	1250	B
12.500	14.500	1.100	1.650	12.504	14.496	X						XXXX	100012500	–	1500	B
12.562	13.686	0.618	0.963	12.564	13.684					X		XXXX	56212562	–	875	B
12.562	13.812	0.688	0.963	12.565	13.809	X						XXXX	62501250	–	875	B
12.750	13.250	0.275	0.618	12.751	13.249	X				X		XXXX	25012750	–	562	B
12.750	13.375	0.343	0.688	12.752	13.373	X						XXXX	31212750	–	625	B
12.750	13.500	0.413	0.688	12.752	13.498	X				X	X	XXXX	37512750	–	625	B
12.750	13.750	0.550	0.825	12.752	13.748	X						XXXX	50012750	–	750	B
12.750	14.000	0.688	1.100	12.753	13.997	X		X	X			XXXX	62512750	–	1000	B
13.000	13.500	0.275	0.618	13.001	13.499		X	X		X		XXXX	25013000	–	562	B
13.000	13.750	0.413	0.413	13.002	13.748	X	X			X		XXXX	37513000	–	375	B
13.000	13.750	0.413	0.688	13.002	13.748					X		XXXX	37513000	–	625	B
13.000	14.000	0.550	0.825	13.002	13.998	X	X	X	X	X		XXXX	50013000	–	750	B
13.000	14.250	0.688	1.100	13.003	14.247	X						XXXX	62513000	–	1000	B
13.000	14.500	0.825	1.100	13.003	14.497	X				X		XXXX	75013000	–	1000	B
13.187	14.000	0.447	0.688	13.189	13.998	X						XXXX	40613187	–	625	B
13.250	14.000	0.413	0.618	13.252	13.998				X			XXXX	37513250	–	562	B
13.250	14.000	0.413	0.688	13.252	13.998	X				X	X	XXXX	37513250	–	625	B

†For plastic compounds, see Table 3-1, page 3-11. For rubber compounds, see Table 3-3, page 3-14.

*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.

For custom groove calculations, see Appendix C.

02/15/08



Standard, Deep and Type B PolyPak Profile

Table 6-8. Standard, Deep and Type B PolyPak Gland Dimensions — Inch (Continued)

A	B	C		D	E	Compound Codes (X = Standard Offering) [†]						Part Number				
Rod Diameter	(Rod) Groove Diameter	(Std. PP) Groove Width	(Deep & B) Groove Width	Throat Diameter*	Piston Diameter**	Standard PP		Deep PP		Type B		Com- pound Code		Ener- gizer Code	Add to the part number for Type B or Deep only	Add to the part number for Type B only
(Bore) Groove Diameter	Bore Diameter					Plastic	Rubber	Plastic	Rubber	Plastic	Rubber					
13.250	14.250	0.550	0.825	13.252	14.248			X		X		XXXX	50013250	—	750	B
13.375	14.000	0.343	0.688	13.377	13.998	X						XXXX	31213375	—	625	B
13.500	14.000	0.275	0.618	13.501	13.999	X	X			X		XXXX	25013500	—	562	B
13.500	14.250	0.413	0.688	13.502	14.248	X		X		X		XXXX	37513500	—	625	B
13.500	14.500	0.550	0.825	13.502	14.498	X		X		X		XXXX	50013500	—	750	B
13.500	14.750	0.688	0.963	13.503	14.747					X	X	XXXX	62513500	—	875	B
13.500	15.000	0.825	1.375	13.503	14.997	X						XXXX	75013500	—	1250	B
13.750	14.500	0.413	0.688	13.752	14.498	X				X		XXXX	37513750	—	625	B
13.750	15.250	0.825	1.375	13.753	15.247	X						XXXX	75013750	—	1250	B
14.000	14.500	0.275	0.413	14.001	14.499	X		X				XXXX	25014000	—	375	B
14.000	14.750	0.413	0.688	14.002	14.748	X						XXXX	37514000	—	625	B
14.000	15.000	0.550	0.825	14.002	14.998			X		X		XXXX	50014000	—	750	B
14.000	15.250	0.688	1.100	14.003	15.247					X		XXXX	62514000	—	1000	B
14.000	15.250	0.688	1.100	14.003	15.247	X						XXXX	62514750	—	1000	B
14.000	15.500	0.825	1.375	14.003	15.497	X	X			X		XXXX	75014000	—	1250	B
14.000	15.750	0.963	1.650	14.004	15.746			X				XXXX	87514000	—	1500	B
14.000	16.000	1.100	1.650	14.004	15.996	X				X		XXXX	100014000	—	1500	B
14.125	14.625	0.275	0.413	14.126	14.624	X						XXXX	25014125	—	375	B
14.250	14.750	0.275	0.413	14.251	14.749	X						XXXX	25014250	—	375	B
14.250	15.000	0.413	0.688	14.252	14.998					X		XXXX	37514250	—	625	B
14.250	15.250	0.550	0.825	14.252	15.248	X						XXXX	50014250	—	750	B
14.250	15.750	0.825	1.375	14.253	15.747	X						XXXX	75014250	—	1250	B
14.420	15.420	0.550	0.550	14.422	15.418					X		XXXX	50014420	—	500	B
14.500	15.000	0.275	0.413	14.501	14.999	X						XXXX	25014500	—	375	B
14.500	15.000	0.275	0.413	14.501	14.999			X	X			XXXX	25014500	—	375	B
14.500	15.250	0.413	0.688	14.502	15.248	X						XXXX	37514500	—	625	B
14.500	15.500	0.550	0.825	14.502	15.498	X						XXXX	50014500	—	750	B
14.500	16.000	0.825	1.375	14.503	15.997	X		X		X		XXXX	75014500	—	1250	B
14.750	15.500	0.413	0.688	14.752	15.498	X		X		X		XXXX	37514750	—	625	B
14.750	15.750	0.550	0.825	14.752	15.748					X		XXXX	50014750	—	750	B
14.750	16.000	0.688	1.100	14.753	15.997	X						XXXX	62515000	—	1000	B
14.750	16.250	0.825	1.375	14.753	16.247	X						XXXX	75014750	—	1250	B
14.875	15.500	0.343	0.688	14.877	15.498	X						XXXX	31214875	—	625	B
15.000	15.500	0.275	0.618	15.001	15.499		X			X		XXXX	25015000	—	562	B
15.000	15.750	0.413	0.688	15.002	15.748	X						XXXX	37515000	—	625	B
15.000	16.000	0.550	0.825	15.002	15.998	X	X	X	X	X		XXXX	50015000	—	750	B
15.000	16.500	0.825	1.375	15.003	16.497			X				XXXX	75015000	—	1250	B
15.000	17.000	1.100	1.650	15.004	16.996					X		XXXX	100015000	—	1500	B
15.250	16.000	0.413	0.688	15.252	15.998			X	X			XXXX	37515250	—	625	B
15.250	16.250	0.550	0.825	15.252	16.248					X		XXXX	50015250	—	750	B
15.250	16.500	0.688	1.100	15.253	16.497					X		XXXX	62515250	—	1000	B
15.375	16.000	0.343	0.688	15.377	15.998			X				XXXX	31215375	—	625	B

[†]For plastic compounds, see Table 3-1, page 3-11. For rubber compounds, see Table 3-3, page 3-14.

*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.

For custom groove calculations, see Appendix C.

Standard, Deep and Type B PolyPak Profile

Table 6-8. Standard, Deep and Type B PolyPak Gland Dimensions — Inch (Continued)

A	B	C		D	E	Compound Codes (X = Standard Offering)†						Part Number				
Rod Diameter	(Rod) Groove Diameter	(Std. PP) Groove Width	(Deep & B) Groove Width	Throat Diameter*	Piston Diameter**	Standard PP		Deep PP		Type B		Com- pound Code		Ener- gizer Code	Add to the part number for Type B or Deep only	Add to the part number for Type B only
(Bore) Groove Diameter	Bore Diameter			Plastic		Rubber	Plastic	Rubber	Plastic	Rubber						
15.500	16.000	0.275	0.413	15.501	15.999	X						XXXX	25015500	–	375	B
15.500	16.250	0.413	0.688	15.502	16.248	X						XXXX	37515500	–	625	B
15.500	16.500	0.550	0.825	15.502	16.498	X		X	X	X	X	XXXX	50015500	–	750	B
15.500	16.750	0.688	1.100	15.503	16.747					X	X	XXXX	62515500	–	1000	B
15.625	16.250	0.343	0.688	15.627	16.248					X		XXXX	31215625	–	625	B
15.625	17.125	0.825	1.375	15.628	17.122					X		XXXX	75015625	–	1250	B
15.750	16.250	0.275	0.618	15.751	16.249			X				XXXX	25015750	–	562	B
15.750	16.500	0.413	0.688	15.752	16.498	X					X	XXXX	37515750	–	625	B
15.750	16.750	0.550	0.825	15.752	16.748	X						XXXX	50015750	–	750	B
15.875	16.500	0.343	0.688	15.877	16.498	X						XXXX	31215875	–	625	B
16.000	16.500	0.275	0.275	16.001	16.499			X				XXXX	25016000	–	250	B
16.000	16.500	0.275	0.413	16.001	16.499			X				XXXX	25016000	–	375	B
16.000	16.750	0.413	0.688	16.002	16.748	X		X				XXXX	37516000	–	625	B
16.000	17.000	0.550	0.825	16.002	16.998	X	X	X	X			XXXX	50016000	–	750	B
16.000	17.500	0.825	1.375	16.003	17.497	X	X					XXXX	75016000	–	1250	B
16.000	17.750	0.963	1.375	16.004	17.746			X				XXXX	87516000	–	1250	B
16.000	17.750	0.963	1.513	16.004	17.746			X				XXXX	87516000	–	1375	B
16.000	18.000	1.100	1.375	16.004	17.996	X		X		X		XXXX	100016000	–	1250	B
16.250	17.000	0.413	0.688	16.252	16.998	X						XXXX	37516250	–	625	B
16.263	16.763	0.275	0.413	16.264	16.762					X		XXXX	25016263	–	375	B
16.500	17.250	0.413	0.688	16.502	17.248	X						XXXX	37516500	–	625	B
16.500	17.500	0.550	0.825	16.502	17.498			X		X		XXXX	50016500	–	750	B
16.500	18.000	0.825	0.825	16.503	17.997			X				XXXX	75016500	–	750	B
16.500	18.000	0.825	1.375	16.503	17.997			X				XXXX	75016500	–	1250	B
16.750	17.750	0.550	0.825	16.752	17.748					X		XXXX	50016750	–	750	B
16.750	18.000	0.688	1.100	16.753	17.997	X						XXXX	62516750	–	1000	B
17.000	18.000	0.550	0.825	17.002	17.998	X	X	X	X	X		XXXX	50017000	–	750	B
17.000	19.000	1.100	1.375	17.004	18.996			X				XXXX	100017000	–	1250	B
17.250	18.000	0.413	0.688	17.252	17.998	X						XXXX	37517250	–	625	B
17.500	18.500	0.550	0.825	17.502	18.498	X				X		XXXX	50017500	–	750	B
17.500	18.750	0.688	1.100	17.503	18.747			X				XXXX	62517500	–	1000	B
17.500	19.500	1.100	1.650	17.504	19.496					X		XXXX	100017500	–	1500	B
17.625	19.125	0.825	1.375	17.628	19.122					X		XXXX	75017625	–	1250	B
17.750	18.500	0.413	0.550	17.752	18.498			X				XXXX	37517750	–	500	B
17.750	19.000	0.688	1.100	17.753	18.997					X		XXXX	62517750	–	1000	B
17.875	18.500	0.343	0.550	17.877	18.498						X	XXXX	31217875	–	500	B
17.875	18.563	0.377	0.688	17.877	18.561	X						XXXX	34301062	–	625	B
18.000	19.000	0.550	0.825	18.002	18.998			X		X		XXXX	50018000	–	750	B
18.000	19.250	0.688	1.375	18.003	19.247			X				XXXX	62518000	–	1250	B
18.000	19.500	0.825	1.375	18.003	19.497	X		X				XXXX	75018000	–	1250	B
18.000	19.750	0.963	1.375	18.004	19.746			X				XXXX	87518000	–	1250	B
18.000	20.000	1.100	1.650	18.004	19.996	X						XXXX	100018000	–	1500	B

†For plastic compounds, see Table 3-1, page 3-11. For rubber compounds, see Table 3-3, page 3-14.

*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.

For custom groove calculations, see Appendix C.

Standard, Deep and Type B PolyPak Profile

Table 6-8. Standard, Deep and Type B PolyPak Gland Dimensions — Inch (Continued)

A	B	C		D	E	Compound Codes (X = Standard Offering) [†]						Part Number				
Rod Diameter	(Rod) Groove Diameter	(Std. PP) Groove Width	(Deep & B) Groove Width	Throat Diameter*	Piston Diameter**	Standard PP		Deep PP		Type B		Com- pound Code		Ener- gizer Code	Add to the part number for Type B or Deep only	Add to the part number for Type B only
(Bore) Groove Diameter	Bore Diameter					Plastic	Rubber	Plastic	Rubber	Plastic	Rubber					
18.187	18.937	0.413	0.688	18.189	18.935	X						XXXX	37518187	—	625	B
18.250	18.750	0.275	0.413	18.251	18.749					X		XXXX	25018250	—	375	B
18.500	19.500	0.550	0.825	18.502	19.498			X				XXXX	50018500	—	750	B
18.500	20.500	1.100	1.650	18.504	20.496	X						XXXX	100018500	—	1500	B
18.750	20.000	0.688	1.100	18.753	19.997	X	X			X		XXXX	62518750	—	1000	B
19.000	19.500	0.275	0.413	19.001	19.499	X						XXXX	25019000	—	375	B
19.000	20.000	0.550	0.825	19.002	19.998	X	X	X		X		XXXX	50019000	—	750	B
19.000	20.500	0.825	1.375	19.003	20.497	X				X		XXXX	75019000	—	1250	B
19.250	20.000	0.413	0.688	19.252	19.998					X	X	XXXX	37519250	—	625	B
19.250	20.500	0.688	1.100	19.253	20.497							XXXX	62519250	—	1000	B
19.250	21.000	0.963	1.513	19.254	20.996			X				XXXX	87519250	—	1375	B
19.375	20.250	0.481	0.550	19.377	20.248					X		XXXX	43719375	—	500	B
19.500	20.000	0.275	0.275	19.501	19.999			X				XXXX	25019500	—	250	B
19.500	20.000	0.275	0.343	19.501	19.999			X				XXXX	25019500	—	312	B
19.500	20.250	0.413	0.688	19.502	20.248	X						XXXX	37519500	—	625	B
19.500	20.500	0.550	0.825	19.502	20.498	X		X				XXXX	50019500	—	750	B
19.625	20.625	0.550	0.825	19.627	20.623					X		XXXX	50019625	—	750	B
19.750	21.000	0.688	1.100	19.753	20.997					X		XXXX	62519750	—	1000	B
20.000	21.000	0.550	0.825	20.002	20.998	X		X		X		XXXX	50020000	—	750	B
20.000	21.250	0.688	1.100	20.003	21.247	X						XXXX	62520000	—	1000	B
20.000	21.500	0.825	1.100	20.003	21.497					X		XXXX	75020000	—	1000	B
20.000	21.500	0.825	1.375	20.003	21.497			X		X		XXXX	75020000	—	1250	B
20.000	21.750	0.963	1.513	20.004	21.746	X						XXXX	87520000	—	1375	B
20.000	22.000	1.100	0.963	20.004	21.996			X				XXXX	100020000	—	875	B
20.000	22.000	1.100	1.650	20.004	21.996			X				XXXX	100020000	—	1500	B
20.250	21.250	0.550	0.825	20.252	21.248					X		XXXX	50020250	—	750	B
20.500	21.500	0.550	0.825	20.502	21.498			X				XXXX	50020500	—	750	B
20.500	22.000	0.825	1.100	20.503	21.997	X				X		XXXX	75020500	—	1000	B
20.750	21.500	0.413	0.550	20.752	21.498					X		XXXX	37520750	—	500	B
21.000	21.500	0.275	0.343	21.001	21.499			X				XXXX	25021000	—	312	B
21.000	22.000	0.550	0.825	21.002	21.998	X		X		X		XXXX	50021000	—	750	B
21.000	22.500	0.825	1.375	21.003	22.497			X				XXXX	75021000	—	1250	B
21.500	22.500	0.550	0.825	21.502	22.498			X				XXXX	50021500	—	750	B
21.500	23.000	0.825	1.375	21.503	22.997			X				XXXX	75021500	—	1250	B
21.750	22.250	0.275	0.413	21.751	22.249					X		XXXX	25021750	—	375	B
21.875	22.875	0.550	0.825	21.877	22.873	X						XXXX	50021875	—	750	B
22.000	23.000	0.550	0.825	22.002	22.998					X		XXXX	50022000	—	750	B
22.000	23.500	0.825	1.375	22.003	23.497	X		X				XXXX	75022000	—	1250	B
22.000	24.000	1.100	1.513	22.004	23.996			X				XXXX	100022000	—	1375	B
22.062	22.562	0.275	0.413	22.063	22.561					X		XXXX	25022062	—	375	B
22.500	23.000	0.275	0.343	22.501	22.999	X		X				XXXX	25022500	—	312	B
22.500	24.000	0.825	1.375	22.503	23.997			X				XXXX	75022500	—	1250	B

[†]For plastic compounds, see Table 3-1, page 3-11. For rubber compounds, see Table 3-3, page 3-14.

*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.

For custom groove calculations, see Appendix C.

Standard, Deep and Type B PolyPak Profile

Table 6-8. Standard, Deep and Type B PolyPak Gland Dimensions — Inch (Continued)

A	B	C		D	E	Compound Codes (X = Standard Offering)†						Part Number				
Rod Diameter	(Rod) Groove Diameter	(Std. PP) Groove Width	(Deep & B) Groove Width	Throat Diameter*	Piston Diameter**	Standard PP		Deep PP		Type B		Com- pound Code		Ener- gizer Code	Add to the part number for Type B or Deep only	Add to the part number for Type B only
(Bore) Groove Diameter	Bore Diameter			Plastic		Rubber	Plastic	Rubber	Plastic	Rubber						
23.000	23.500	0.275	0.413	23.001	23.499	X				X		XXXX	25023000	–	375	B
23.000	23.750	0.413	0.688	23.002	23.748	X						XXXX	37523000	–	625	B
23.000	24.000	0.550	0.825	23.002	23.998	X						XXXX	50023000	–	750	B
23.250	24.000	0.413	0.688	23.252	23.998			X				XXXX	37523250	–	625	B
23.375	25.375	1.100	1.650	23.379	25.371	X						XXXX	100023375	–	1500	B
23.500	24.000	0.275	0.413	23.501	23.999	X						XXXX	25023500	–	375	B
23.500	24.500	0.550	0.825	23.502	24.498	X						XXXX	50023500	–	750	B
23.500	25.000	0.825	1.375	23.503	24.997					X		XXXX	75023500	–	1250	B
23.750	24.250	0.275	0.413	23.751	24.249					X		XXXX	25023750	–	375	B
24.000	24.500	0.275	0.413	24.001	24.499	X				X		XXXX	25024000	–	375	B
24.000	25.000	0.550	0.825	24.002	24.998					X		XXXX	50024000	–	750	B
24.000	25.500	0.825	1.375	24.003	25.497			X				XXXX	75024000	–	1250	B
24.000	25.750	0.963	1.375	24.004	25.746			X				XXXX	87524000	–	1250	B
24.000	26.000	1.100	1.650	24.004	25.996					X		XXXX	100024000	–	1500	B
24.500	25.000	0.275	0.413	24.501	24.999	X						XXXX	25024500	–	375	B
24.500	25.500	0.550	0.825	24.502	25.498					X		XXXX	50024500	–	750	B
24.750	26.000	0.688	1.100	24.753	25.997	X						XXXX	62524750	–	1000	B
24.875	25.875	0.550	0.825	24.877	25.873					X		XXXX	50024875	–	750	B
25.000	25.750	0.413	0.688	25.002	25.748	X				X		XXXX	37525000	–	625	B
25.000	26.000	0.550	0.825	25.002	25.998	X						XXXX	50025000	–	750	B
25.000	27.000	1.100	1.477	25.004	26.996			X				XXXX	100025000	–	1343	B
25.250	25.750	0.275	0.413	25.251	25.749					X		XXXX	25025250	–	375	B
25.250	26.000	0.413	0.688	25.252	25.998	X						XXXX	37525250	–	625	B
25.250	26.250	0.550	0.825	25.252	26.248			X				XXXX	50025250	–	750	B
25.500	27.000	0.825	1.375	25.503	26.997	X						XXXX	75025500	–	1250	B
26.000	26.750	0.413	0.688	26.002	26.748						X	XXXX	37526000	–	625	B
26.000	27.000	0.550	0.825	26.002	26.998	X						XXXX	50026000	–	750	B
26.000	27.500	0.825	1.375	26.003	27.497	X						XXXX	75026000	–	1250	B
26.125	27.125	0.550	0.825	26.127	27.123					X		XXXX	50026125	–	750	B
26.500	27.500	0.550	0.825	26.502	27.498	X						XXXX	50026500	–	750	B
26.718	27.218	0.275	0.343	26.719	27.217			X				XXXX	25026718	–	312	B
27.000	28.000	0.550	0.825	27.002	27.998			X		X		XXXX	50027000	–	750	B
27.000	29.000	1.100	1.650	27.004	28.996	X						XXXX	100027000	–	1500	B
27.250	28.000	0.413	0.688	27.252	27.998	X						XXXX	37527250	–	625	B
27.500	28.000	0.275	0.413	27.501	27.999	X						XXXX	25027500	–	375	B
27.500	28.500	0.550	0.825	27.502	28.498			X				XXXX	50027500	–	750	B
27.625	28.625	0.550	0.825	27.627	28.623					X		XXXX	50027625	–	750	B
28.000	29.000	0.550	0.825	28.002	28.998	X						XXXX	50028000	–	750	B
28.000	30.000	1.100	1.650	28.004	29.996	X						XXXX	100028000	–	1500	B
28.187	29.187	0.550	0.825	28.189	29.185					X		XXXX	50028187	–	750	B
28.500	29.500	0.550	0.825	28.502	29.498	X						XXXX	50028500	–	750	B
28.500	29.500	0.550	0.825	28.502	29.498			X				XXXX	50028500	–	750	B

[†]For plastic compounds, see Table 3-1, page 3-11. For rubber compounds, see Table 3-3, page 3-14.

*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.

For custom groove calculations, see Appendix C.

02/15/08



Table 6-8. Standard, Deep and Type B PolyPak Gland Dimensions — Inch (Continued)

A	B	C		D	E	Compound Codes (X = Standard Offering) [†]						Part Number				
Rod Diameter	(Rod) Groove Diameter	(Std. PP) Groove Width	(Deep & B) Groove Width	Throat Diameter*	Piston Diameter**	Standard PP		Deep PP		Type B		Compound Code		Energizer Code	Add to the part number for Type B or Deep only	Add to the part number for Type B only
(Bore) Groove Diameter	Bore Diameter					Plastic	Rubber	Plastic	Rubber	Plastic	Rubber					
28.750	29.500	0.413	0.688	28.752	29.498			X				XXXX	37528750	—	625	B
29.000	30.000	0.550	0.825	29.002	29.998			X				XXXX	50029000	—	750	B
29.000	31.000	1.100	1.650	29.004	30.996					X		XXXX	100029000	—	1500	B
29.750	30.750	0.550	0.825	29.752	30.748					X		XXXX	50029750	—	750	B
30.000	30.750	0.413	0.688	30.002	30.748					X		XXXX	37530000	—	625	B
30.000	30.750	0.413	0.688	30.002	30.748	X						XXXX	37531750	—	625	B
30.000	31.000	0.550	0.687	30.002	30.998			X				XXXX	50030000	—	625	B
30.000	31.250	0.688	1.100	30.003	31.247					X		XXXX	62530000	—	1000	B
30.000	32.000	1.100	1.650	30.004	31.996					X		XXXX	100030000	—	1500	B
30.250	31.250	0.550	0.825	30.252	31.248			X				XXXX	50030250	—	750	B
30.375	31.375	0.550	0.825	30.377	31.373					X		XXXX	50030375	—	750	B
30.750	31.750	0.550	0.825	30.752	31.748					X		XXXX	50030750	—	750	B
31.000	32.000	0.550	0.825	31.002	31.998	X						XXXX	50031000	—	750	B
31.000	33.000	1.100	1.650	31.004	32.996	X						XXXX	100031000	—	1500	B
31.500	32.250	0.413	0.688	31.502	32.248			X				XXXX	37531500	—	625	B
31.500	32.500	0.550	0.825	31.502	32.498					X		XXXX	50031500	—	750	B
31.750	32.500	0.413	0.688	31.752	32.498	X						XXXX	37536250	—	625	B
32.000	32.500	0.275	0.413	32.001	32.499	X						XXXX	25032000	—	375	B
32.000	33.000	0.550	0.825	32.002	32.998	X						XXXX	50032000	—	750	B
32.000	33.500	0.825	0.963	32.003	33.497			X				XXXX	75032000	—	875	B
33.000	34.000	0.550	0.825	33.002	33.998			X		X		XXXX	50033000	—	750	B
34.000	34.750	0.413	0.688	34.002	34.748			X				XXXX	37534000	—	625	B
34.500	35.000	0.275	0.413	34.501	34.999	X						XXXX	25034500	—	375	B
34.500	35.500	0.550	0.825	34.502	35.498					X		XXXX	50034500	—	750	B
35.000	35.750	0.413	0.688	35.002	35.748			X				XXXX	37535000	—	625	B
35.750	36.750	0.550	0.825	35.752	36.748	X						XXXX	50035750	—	750	B
36.000	36.750	0.413	0.688	36.002	36.748			X				XXXX	37536000	—	625	B
36.000	37.000	0.550	0.825	36.002	36.998	X						XXXX	50036000	—	750	B
37.000	37.750	0.413	0.688	37.002	37.748			X				XXXX	37537000	—	625	B
37.000	38.000	0.550	0.825	37.002	37.998	X		X				XXXX	50037000	—	750	B
37.500	38.250	0.413	0.688	37.502	38.248	X						XXXX	37537500	—	625	B
38.000	39.000	0.550	0.825	38.002	38.998					X		XXXX	50038000	—	750	B
38.250	39.250	0.550	0.825	38.252	39.248					X		XXXX	50038250	—	750	B
38.500	39.250	0.413	0.688	38.502	39.248	X						XXXX	37538500	—	625	B
38.750	39.750	0.550	0.825	38.752	39.748					X		XXXX	50038750	—	750	B
39.135	40.135	0.550	0.825	39.137	40.133	X						XXXX	50039135	—	750	B
40.000	40.750	0.413	0.688	40.002	40.748			X				XXXX	37540000	—	625	B
41.000	42.000	0.550	0.825	41.002	41.998					X		XXXX	50041000	—	750	B
41.485	42.485	0.550	0.825	41.487	42.483	X						XXXX	50041485	—	750	B
41.750	42.750	0.550	0.825	41.752	42.748					X		XXXX	50041750	—	750	B
42.000	43.000	0.550	0.688	42.002	42.998					X		XXXX	50042000	—	625	B
42.000	43.000	0.550	0.825	42.002	42.998					X		XXXX	50042000	—	750	B

[†]For plastic compounds, see Table 3-1, page 3-11. For rubber compounds, see Table 3-3, page 3-14.

*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.

For custom groove calculations, see Appendix C.

Standard, Deep and Type B PolyPak Profile

Table 6-8. Standard, Deep and Type B PolyPak Gland Dimensions — Inch (Continued)

A Rod Diameter	B (Rod) Groove Diameter	C		D Throat Diameter*	E Piston Diameter**	Compound Codes (X = Standard Offering)†						Part Number				
		(Std. PP) Groove Width	(Deep & B) Groove Width			Standard PP		Deep PP		Type B		Com- pound Code		Ener- gizer Code	Add to the part number for Type B or Deep only	Add to the part number for Type B only
(Bore) Groove Diameter	Bore Diameter					Plastic	Rubber	Plastic	Rubber	Plastic	Rubber					
42.267	43.267	0.550	0.825	42.269	43.265	X						XXXX	50042267	—	750	B
43.500	44.500	0.550	0.825	43.502	44.498					X		XXXX	50043500	—	750	B
44.125	45.125	0.550	0.825	44.127	45.123					X		XXXX	50044125	—	750	B
44.618	45.618	0.550	0.825	44.620	45.616	X						XXXX	50044618	—	750	B
46.250	47.250	0.550	0.825	46.252	47.248					X		XXXX	50046250	—	750	B
47.500	48.500	0.550	0.825	47.502	48.498					X		XXXX	50047500	—	750	B

†For plastic compounds, see Table 3-1, page 3-11. For rubber compounds, see Table 3-3, page 3-14.

*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.

For custom groove calculations, see Appendix C.

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

Symmetrical Seals

8400 & 8500 U-cup ♦ Preferred Profile

Catalog EPS 5370/USA

8400 Profile, Light Load U-cup with Beveled Lips; 8500 Profile, Light Load U-cup with Scraper Lips



Parker's 8400 and 8500 Series u-cups are symmetrical lip seals for use in either rod or piston sealing applications. The thin, flexible lip design reacts to low pressure and provides an extremely smooth, steady movement with less break away force required because of the inherent low friction. Both the 8400 and 8500 u-cups are produced from the same molds. The 8400 style utilizes a beveled lip, ideal for wiping fluid film, while the 8500 design utilizes a straight cut scraper lip that yields additional lip interference and wipes contamination away from the sealing edge. Both u-cup profiles are available in a variety of rubber compounds to cover a wide range of applications. While the 8400 and 8500 u-cups are primarily designed for pneumatic applications, they can also be used in low to medium pressure hydraulic applications. The pressure range of the u-cups may be extended by incorporating an 8700 back-up ring.

Technical Data

Parker Standard Material*	Temperature Range	Pressure Range†		Surface Speed**
		Hydr.	Pneu.	
N4180A80	-40°F to +250°F (-40°C to +121°C)	1,250 psi (86 bar)	250 psi (17 bar)	< 1.6 ft/s (0.5 m/s)
Additional Materials				
N4274A85	-10°F to +250°F (-23°C to +121°C)	1,750 psi (120 bar)	250 psi (17 bar)	< 1.6 ft/s (0.5 m/s)
V4208A90	-5°F to +400°F (-21°C to +204°C)	2,000 psi (138 bar)	250 psi (17 bar)	< 1.6 ft/s (0.5 m/s)
E4259A80	-65°F to +300°F (-54°C to +149°C)	1,250 psi (86 bar)	250 psi (17 bar)	< 1.6 ft/s (0.5 m/s)



8400 Cross-Section

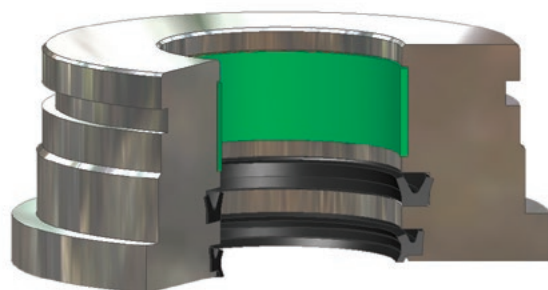


8500 Cross-Section

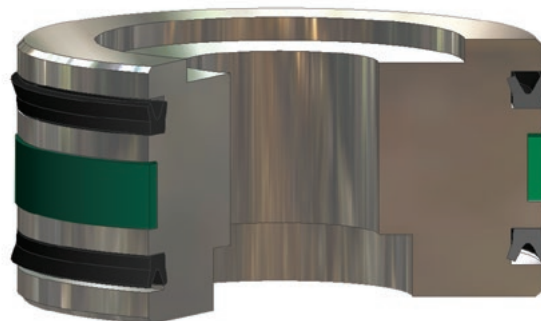
***Alternate Materials:** For applications that may require an alternate material, please contact your local Parker seal representative.

†Pressure Range without wear rings. If used with wear rings, see [Table 2-4, page 2-5](#).

****Surface Speed** for pneumatic applications < 3.3 ft/s (1.0 m/s).



8400 installed in Rod Gland

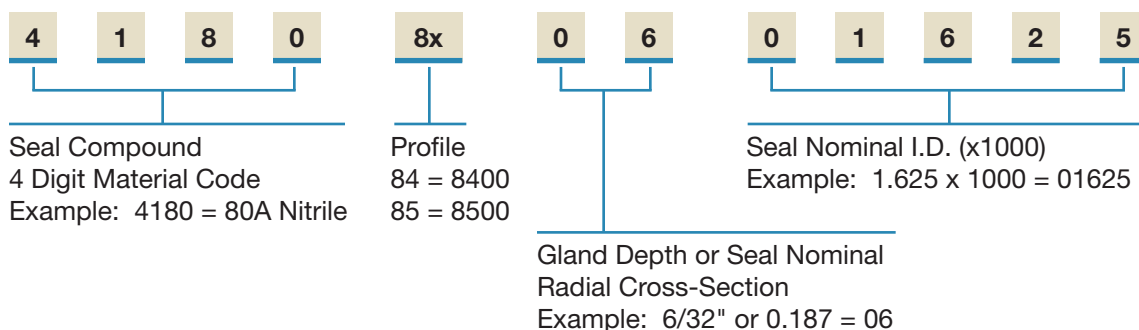


8400 installed in Piston Gland

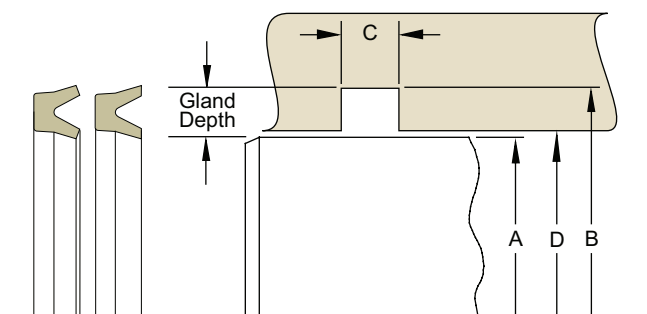
06/01/2014

Part Number Nomenclature — 8400 and 8500 Profiles

Table 6-19. 8400 and 8500 Profile



Rod Gland Calculations — 8400 and 8500 Profiles



Please refer to Engineering [Section 2](#),
[page 2-8](#) for surface finish and additional
hardware considerations.

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Table 6-20. 8400 and 8500 Profiles — Rod Gland Calculation

A Rod Diameter		Seal	B Groove Diameter		C Groove Width	D Throat Diameter*	
Range	Tol.	Cross Section	Calculation	Tol.	+0.015/-.000	Calculation	Tol.
0.125 - 0.249	+0.000/-.002	02/32 (.062)	Dia. A + .125	+0.002/-.000	0.093	Dia. A + .001	+0.002/-.000
0.250 - 0.374	+0.000/-.002	03/32 (.094)	Dia. A + .187	+0.002/-.000	0.125	Dia. A + .001	+0.002/-.000
0.375 - 1.124	+0.000/-.002	04/32 (.125)	Dia. A + .250	+0.002/-.000	0.156	Dia. A + .001	+0.002/-.000
1.125 - 1.624	+0.000/-.002	05/32 (.156)	Dia. A + .312	+0.002/-.000	0.188	Dia. A + .001	+0.002/-.000
1.625 - 3.249	+0.000/-.002	06/32 (.187)	Dia. A + .375	+0.002/-.000	0.218	Dia. A + .001	+0.002/-.000
3.250 - 4.999	+0.000/-.003	08/32 (.250)	Dia. A + .500	+0.003/-.000	0.281	Dia. A + .002	+0.003/-.000
5.000 - 5.499	+0.000/-.003	09/32 (.281)	Dia. A + .562	+0.003/-.000	0.312	Dia. A + .002	+0.003/-.000
5.500 - 8.999	+0.000/-.003	10/32 (.312)	Dia. A + .625	+0.004/-.000	0.344	Dia. A + .002	+0.003/-.000
9.000 +	+0.000/-.004	12/32 (.375)	Dia. A + .750	+0.005/-.000	0.406	Dia. A + .002	+0.004/-.000

* If used with wear rings, refer to wear ring throat diameter, see [Section 9](#).

Above table reflects recommended cross-sections for rod diameters shown. Alternate cross-sections and additional sizes may be considered. Consult www.parker.com/eps/FluidPower for additional cross-sections and sizes, hardware specifications, and part number availability. Contact your Parker representative for assistance.

Table 6-21. 8400 and 8500 Profiles — Rod Gland Dimensions, ♦Parker Standard Sizes

A Rod Diameter		B Groove Diameter		C Groove Width	D Throat Diameter*		Part Number (Replace "8x" with appropriate Profile Code)
Dia	Tol.	Dia	Tol.	+0.015/-.000	Dia	Tol.	
0.125	+0.000/-.001	0.250	+0.002/-.000	0.093	0.126	+0.002/-.000	41808x0200125
0.187	+0.000/-.001	0.312	+0.002/-.000	0.093	0.188	+0.002/-.000	41808x0200187
0.250	+0.000/-.001	0.437	+0.002/-.000	0.125	0.251	+0.002/-.000	41808x0300250
0.312	+0.000/-.001	0.500	+0.002/-.000	0.125	0.313	+0.002/-.000	41808x0300312
0.375	+0.000/-.001	0.625	+0.002/-.000	0.156	0.376	+0.002/-.000	41808x0400375
0.437	+0.000/-.001	0.687	+0.002/-.000	0.156	0.438	+0.002/-.000	41808x0400437
0.500	+0.000/-.001	0.750	+0.002/-.000	0.156	0.501	+0.002/-.000	41808x0400500
0.625	+0.000/-.001	0.875	+0.002/-.000	0.156	0.626	+0.002/-.000	41808x0400625
0.750	+0.000/-.001	1.000	+0.002/-.000	0.156	0.751	+0.002/-.000	41808x0400750
0.875	+0.000/-.001	1.125	+0.002/-.000	0.156	0.876	+0.002/-.000	41808x0400875
1.000	+0.000/-.001	1.250	+0.002/-.000	0.156	1.001	+0.002/-.000	41808x0401000
1.125	+0.000/-.001	1.437	+0.002/-.000	0.188	1.126	+0.002/-.000	41808x0501125
1.250	+0.000/-.001	1.562	+0.002/-.000	0.188	1.251	+0.002/-.000	41808x0501250
1.375	+0.000/-.001	1.687	+0.002/-.000	0.188	1.376	+0.002/-.000	41808x0501375
1.500	+0.000/-.001	1.812	+0.002/-.000	0.188	1.501	+0.002/-.000	41808x0501500
1.625	+0.000/-.002	2.000	+0.002/-.000	0.218	1.626	+0.002/-.000	41808x0601625
1.750	+0.000/-.002	2.125	+0.002/-.000	0.218	1.751	+0.002/-.000	41808x0601750
1.875	+0.000/-.002	2.250	+0.002/-.000	0.218	1.876	+0.002/-.000	41808x0601875
2.000	+0.000/-.002	2.375	+0.002/-.000	0.218	2.001	+0.002/-.000	41808x0602000
2.125	+0.000/-.002	2.500	+0.002/-.000	0.218	2.126	+0.002/-.000	41808x0602125
2.250	+0.000/-.002	2.625	+0.002/-.000	0.218	2.251	+0.002/-.000	41808x0602250
2.375	+0.000/-.002	2.750	+0.002/-.000	0.218	2.376	+0.002/-.000	41808x0602375
2.500	+0.000/-.002	2.875	+0.002/-.000	0.218	2.501	+0.002/-.000	41808x0602500
2.625	+0.000/-.002	3.000	+0.002/-.000	0.218	2.626	+0.002/-.000	41808x0602625
2.750	+0.000/-.002	3.125	+0.002/-.000	0.218	2.751	+0.002/-.000	41808x0602750
3.000	+0.000/-.002	3.375	+0.002/-.000	0.218	3.001	+0.002/-.000	41808x0603000
3.250	+0.000/-.002	3.750	+0.003/-.000	0.281	3.252	+0.003/-.000	41808x0803250
3.500	+0.000/-.002	4.000	+0.003/-.000	0.281	3.502	+0.003/-.000	41808x0803500
3.750	+0.000/-.002	4.250	+0.003/-.000	0.281	3.752	+0.003/-.000	41808x0803750
4.000	+0.000/-.002	4.500	+0.003/-.000	0.281	4.002	+0.003/-.000	41808x0804000
4.250	+0.000/-.002	4.750	+0.003/-.000	0.281	4.252	+0.003/-.000	41808x0804250
4.500	+0.000/-.002	5.000	+0.003/-.000	0.281	4.502	+0.003/-.000	41808x0804500
4.750	+0.000/-.002	5.250	+0.003/-.000	0.281	4.752	+0.003/-.000	41808x0804750
5.000	+0.000/-.002	5.562	+0.003/-.000	0.312	5.002	+0.003/-.000	41808x0905000
5.500	+0.000/-.002	6.125	+0.004/-.000	0.344	5.502	+0.003/-.000	41808x1005500
6.000	+0.000/-.002	6.625	+0.004/-.000	0.344	6.002	+0.003/-.000	41808x1006000
6.500	+0.000/-.002	7.125	+0.004/-.000	0.344	6.502	+0.003/-.000	41808x1006500
7.000	+0.000/-.002	7.625	+0.004/-.000	0.344	7.002	+0.003/-.000	41808x1007000

* If used with wear rings, refer to wear ring throat diameter, see [Section 9](#).

Above table reflects recommended cross-sections for rod diameters shown. Alternate cross-sections and additional sizes may be considered. Consult www.parker.com/eps/FluidPower for additional cross-sections and sizes, hardware specifications, and part number availability. Contact your Parker representative for assistance.

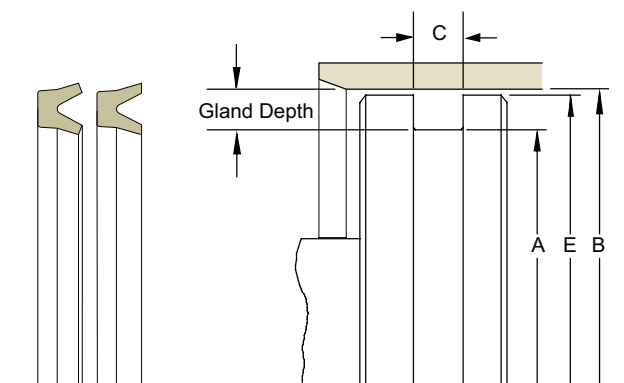
Table 6-21. 8400 and 8500 Profiles — Rod Gland Dimensions, ♦Parker Standard Sizes (cont'd)

A Rod Diameter		B Groove Diameter		C Groove Width	D Throat Diameter*		Part Number (Replace "8x" with appropriate Profile Code)
Dia	Tol.	Dia	Tol.	+0.015/- .000	Dia	Tol.	
7.500	+0.000/-0.002	8.125	+0.004/-0.000	0.344	7.502	+0.003/-0.000	41808x1007500
8.000	+0.000/-0.002	8.625	+0.004/-0.000	0.344	8.002	+0.003/-0.000	41808x1008000
8.500	+0.000/-0.002	9.125	+0.004/-0.000	0.344	8.502	+0.003/-0.000	41808x1008500
9.000	+0.000/-0.002	9.750	+0.005/-0.000	0.406	9.002	+0.004/-0.000	41808x1209000
9.500	+0.000/-0.002	10.250	+0.005/-0.000	0.406	9.502	+0.004/-0.000	41808x1209500
10.000	+0.000/-0.002	10.750	+0.005/-0.000	0.406	10.002	+0.004/-0.000	41808x1210000

* If used with wear rings, refer to wear ring throat diameter, see [Section 9](#).

Above table reflects recommended cross-sections for rod diameters shown. Alternate cross-sections and additional sizes may be considered. Consult www.parker.com/eps/FluidPower for additional cross-sections and sizes, hardware specifications, and part number availability. Contact your Parker representative for assistance.

Piston Gland Calculations — 8400 and 8500 Profiles



Please refer to Engineering [Section 2](#), [page 2-8](#) for surface finish and additional hardware considerations.

Table 6-22. 8400 and 8500 Profiles — Piston Gland Calculation

B Bore Diameter		Seal	A Groove Diameter		C Groove Width	E Piston Diameter*	
Range	Tol.		Calculation	Tol.	+0.015/- .000	Calculation	Tol.
0.250 - 0.436	+0.002/-0.000	2/32 (.062)	Dia. B - .125	+0.000/-0.002	0.093	Dia. B - .001	+0.000/-0.001
0.437 - 0.624	+0.002/-0.000	3/32 (.094)	Dia. B - .187	+0.000/-0.002	0.125	Dia. B - .001	+0.000/-0.001
0.625 - 1.374	+0.002/-0.000	4/32 (.125)	Dia. B - .250	+0.000/-0.002	0.156	Dia. B - .001	+0.000/-0.001
1.375 - 1.749	+0.002/-0.000	5/32 (.156)	Dia. B - .312	+0.000/-0.002	0.188	Dia. B - .001	+0.000/-0.001
1.750 - 2.999	+0.002/-0.000	6/32 (.187)	Dia. B - .375	+0.000/-0.002	0.218	Dia. B - .001	+0.000/-0.002
3.000 - 3.999	+0.003/-0.000	7/32 (.219)	Dia. B - .437	+0.000/-0.003	0.250	Dia. B - .001	+0.000/-0.002
4.000 - 5.499	+0.003/-0.000	8/32 (.250)	Dia. B - .500	+0.000/-0.003	0.281	Dia. B - .001	+0.000/-0.002
5.500 - 6.999	+0.003/-0.000	9/32 (.281)	Dia. B - .562	+0.000/-0.003	0.312	Dia. B - .002	+0.000/-0.002
7.000 - 9.999	+0.003/-0.000	10/32 (.312)	Dia. B - .625	+0.000/-0.004	0.344	Dia. B - .002	+0.000/-0.002
10.000 - 11.999	+0.004/-0.000	11/32 (.344)	Dia. B - .687	+0.000/-0.004	0.375	Dia. B - .002	+0.000/-0.002
12.000 - 13.999	+0.004/-0.000	12/32 (.375)	Dia. B - .750	+0.000/-0.005	0.406	Dia. B - .002	+0.000/-0.002
14.000 - 17.999	+0.004/-0.000	13/32 (.406)	Dia. B - .812	+0.000/-0.005	0.437	Dia. B - .002	+0.000/-0.002
18.000 +	+0.005/-0.000	14/32 (.437)	Dia. B - .875	+0.000/-0.006	0.469	Dia. B - .002	+0.000/-0.002

* If used with wear rings, refer to wear ring bore diameter, see [Section 9](#).

Above table reflects recommended cross-sections for piston diameters shown. Alternate cross-sections and additional sizes may be considered. Consult www.parker.com/eps/FluidPower for additional cross-sections and sizes, hardware specifications, and part number availability. Contact your Parker representative for assistance.

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Table 6-23. 8400 and 8500 Profiles — Piston Gland Dimensions, ♦Parker Standard Sizes

B Bore Diameter		A Groove Diameter		C Groove Width	E Piston Diameter*		Part Number (Replace "8x" with appropriate Profile Code)
Dia	Tol.	Dia	Tol.	+0.015/ -0.000	Dia	Tol.	
0.250	+0.002/-0.000	0.125	+0.000/-0.002	0.093	0.249	+0.000/-0.001	41808x0200125
0.312	+0.002/-0.000	0.187	+0.000/-0.002	0.093	0.311	+0.000/-0.001	41808x0200187
0.375	+0.002/-0.000	0.250	+0.000/-0.002	0.093	0.374	+0.000/-0.001	41808x0200250
0.437	+0.002/-0.000	0.250	+0.000/-0.002	0.125	0.436	+0.000/-0.001	41808x0300250
0.500	+0.002/-0.000	0.312	+0.000/-0.002	0.125	0.499	+0.000/-0.001	41808x0300312
0.625	+0.002/-0.000	0.375	+0.000/-0.002	0.156	0.624	+0.000/-0.001	41808x0400375
0.750	+0.002/-0.000	0.500	+0.000/-0.002	0.156	0.749	+0.000/-0.001	41808x0400500
0.875	+0.002/-0.000	0.625	+0.000/-0.002	0.156	0.874	+0.000/-0.001	41808x0400625
1.000	+0.002/-0.000	0.750	+0.000/-0.002	0.156	0.999	+0.000/-0.001	41808x0400750
1.125	+0.002/-0.000	0.875	+0.000/-0.002	0.156	1.124	+0.000/-0.001	41808x0400875
1.250	+0.002/-0.000	1.000	+0.000/-0.002	0.156	1.249	+0.000/-0.001	41808x0401000
1.375	+0.002/-0.000	1.062	+0.000/-0.002	0.188	1.374	+0.000/-0.001	41808x0501062
1.500	+0.002/-0.000	1.187	+0.000/-0.002	0.188	1.499	+0.000/-0.001	41808x0501187
1.625	+0.002/-0.000	1.312	+0.000/-0.002	0.188	1.624	+0.000/-0.001	41808x0501312
1.750	+0.002/-0.000	1.375	+0.000/-0.002	0.218	1.749	+0.000/-0.002	41808x0601375
1.875	+0.002/-0.000	1.500	+0.000/-0.002	0.218	1.874	+0.000/-0.002	41808x0601500
2.000	+0.002/-0.000	1.625	+0.000/-0.002	0.218	1.999	+0.000/-0.002	41808x0601625
2.125	+0.002/-0.000	1.750	+0.000/-0.002	0.218	2.124	+0.000/-0.002	41808x0601750
2.250	+0.002/-0.000	1.875	+0.000/-0.002	0.218	2.249	+0.000/-0.002	41808x0601875
2.375	+0.002/-0.000	2.000	+0.000/-0.002	0.218	2.374	+0.000/-0.002	41808x0602000
2.500	+0.002/-0.000	2.125	+0.000/-0.002	0.218	2.499	+0.000/-0.002	41808x0602125
2.625	+0.002/-0.000	2.250	+0.000/-0.002	0.218	2.624	+0.000/-0.002	41808x0602250
2.750	+0.002/-0.000	2.375	+0.000/-0.002	0.218	2.749	+0.000/-0.002	41808x0602375
2.875	+0.002/-0.000	2.500	+0.000/-0.002	0.218	2.874	+0.000/-0.002	41808x0602500
3.000	+0.003/-0.000	2.562	+0.000/-0.003	0.250	2.999	+0.000/-0.002	41808x0702562
3.250	+0.003/-0.000	2.812	+0.000/-0.003	0.250	3.249	+0.000/-0.002	41808x0702812
3.500	+0.003/-0.000	3.062	+0.000/-0.003	0.250	3.499	+0.000/-0.002	41808x0703062
3.750	+0.003/-0.000	3.312	+0.000/-0.003	0.250	3.749	+0.000/-0.002	41808x0703312
4.000	+0.003/-0.000	3.500	+0.000/-0.003	0.281	3.999	+0.000/-0.002	41808x0803500
4.250	+0.003/-0.000	3.750	+0.000/-0.003	0.281	4.249	+0.000/-0.002	41808x0803750
4.500	+0.003/-0.000	4.000	+0.000/-0.003	0.281	4.499	+0.000/-0.002	41808x0804000
4.750	+0.003/-0.000	4.250	+0.000/-0.003	0.281	4.749	+0.000/-0.002	41808x0804250
5.000	+0.003/-0.000	4.500	+0.000/-0.003	0.281	4.999	+0.000/-0.002	41808x0804500
5.500	+0.003/-0.000	4.937	+0.000/-0.003	0.312	5.498	+0.000/-0.002	41808x0904937
6.000	+0.003/-0.000	5.437	+0.000/-0.003	0.312	5.998	+0.000/-0.002	41808x0905437
6.500	+0.003/-0.000	5.937	+0.000/-0.003	0.312	6.498	+0.000/-0.002	41808x0905937
7.000	+0.003/-0.000	6.375	+0.000/-0.004	0.344	6.998	+0.000/-0.002	41808x1006375
8.000	+0.003/-0.000	7.375	+0.000/-0.004	0.344	7.998	+0.000/-0.002	41808x1007375

* If used with wear rings, refer to wear ring bore diameter, see [Section 9](#).

Above table reflects recommended cross-sections for piston diameters shown. Alternate cross-sections and additional sizes may be considered. Consult www.parker.com/eps/FluidPower for additional cross-sections and sizes, hardware specifications, and part number availability. Contact your Parker representative for assistance.

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Table 6-23. 8400 and 8500 Profiles — Piston Gland Dimensions, ♦Parker Standard Sizes (cont'd)

B Bore Diameter		A Groove Diameter		C Groove Width	E Piston Diameter*		Part Number (Replace "8x" with appropriate Profile Code)
Dia	Tol.	Dia	Tol.	+0.015/ -0.000	Dia	Tol.	
10.000	+0.004/-0.000	9.312	+0.000/-0.004	0.375	9.998	+0.000/-0.002	41808x1109312
12.000	+0.004/-0.000	11.250	+0.000/-0.005	0.406	11.998	+0.000/-0.002	41808x1211250
14.000	+0.004/-0.000	13.187	+0.000/-0.005	0.437	13.998	+0.000/-0.002	41808x1313187
16.000	+0.004/-0.000	15.187	+0.000/-0.005	0.437	15.998	+0.000/-0.002	41808x1315187
18.000	+0.005/-0.000	17.125	+0.000/-0.006	0.469	17.998	+0.000/-0.002	41808x1417125

* If used with wear rings, refer to wear ring bore diameter, see [Section 9](#).

Above table reflects recommended cross-sections for piston diameters shown. Alternate cross-sections and additional sizes may be considered. Consult www.parker.com/eps/FluidPower for additional cross-sections and sizes, hardware specifications, and part number availability. Contact your Parker representative for assistance.

Symmetrical Seal SL Profile

Catalog EPS 5370/USA

SL Profile, Dual Compound Dual Lip Seal



Parker's SL profile is considered a multiple lip seal. The primary sealing lip is provided by the precision knife trimmed rubber element that snaps into the Molythane® base. The base of the SL profile provides the secondary lip which is aligned directly below the primary lip to provide extrusion, and wear resistance. The SL profile combines the sealing benefit of rubber with the wear and strength of Molythane. The beveled rubber lip geometry is excellent for cutting fluid film and the squeeze forces across the lips maintain sealing contact under low pressure or vacuum. The ability of Parker to supply a variety of rubber compounds allows the SL profile to be compatible with a wide range of pressure, temperature and fluids. The SL profile is designed to work as a stand alone rod seal or can be used in tandem with a buffer seal. In piston applications, this seal will function as a unidirectional seal. Dual SL profile seals should not be installed back-to-back in bi-directional pressure applications, as a pressure trap between the seals may occur.

6

Technical Data

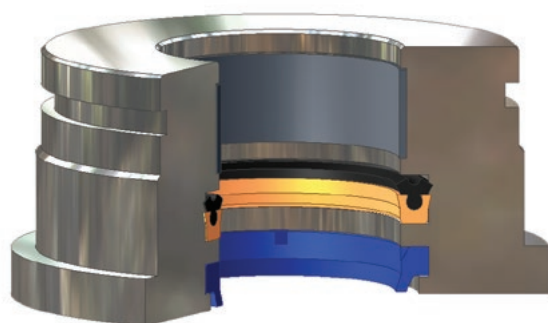


SL Cross-Section

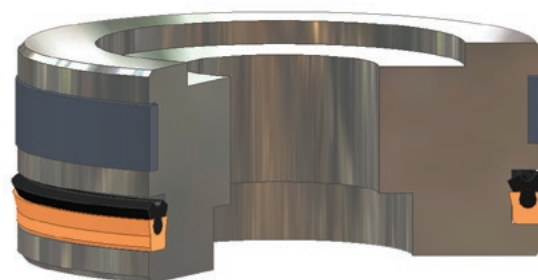
Standard Materials*	Temperature Range	Pressure Range†	Surface Speed
Rubber Element:			
N4180A80	-40°F to +250°F (-40°C to +121°C)		
N4182A75	-65°F to +275°F (-54°C to +135°C)		
Base:			
P4615A90	-65°F to +200°F (-54°C to +93°C)	5,000 psi (344 bar)	< 1.6 ft/s (0.5 m/s)

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

†Pressure Range without wear rings. If used with wear rings, see [Table 2-4, page 2-5](#).



SL installed in Rod Gland



SL installed in Piston Gland

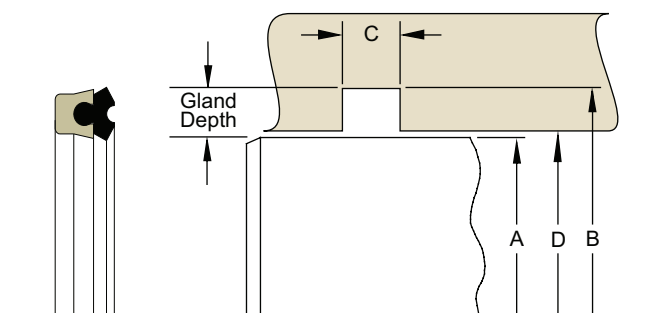
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Part Number Nomenclature — SL Profile

Table 6-24. SL Profile

4	1	8	0	SL	2	5	0	0	2	0	0	0	-	3	7	5	-	4	6	1	5
Rubber Element Compound 4 Digit Material Code Example: 4180 = 80A NBR				Profile	Seal Nominal Radial Cross-Section Example: .250 x 1000 = 250			Seal Nominal I.D. (x1000) Example: 2.000 x 1000 = 02000					-	Seal Nominal Axial Width (x1000) Example: .375 x 1000 = 375			-	Base Compound 4 Digit Material Code Example: 4615 = 90A Molythane®			

Rod Gland Dimensions — SL Profile



Please refer to Engineering [Section 2](#), [page 2-8](#) for surface finish and additional hardware considerations.

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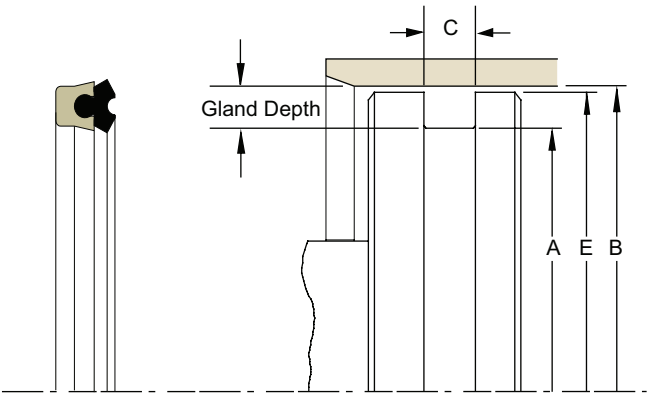
Table 6-25. SL Profile — Rod Gland Calculation

A Rod Diameter		Seal		B Groove Diameter		C Groove Width	D Throat Diameter*	
Range	Tol.	Cross Section	Axial Width	Calculation	Tol.	+0.015/-.000	Calculation	Tol.
1.000 - 1.999	+0.000/-.002	3/16 (.187)	5/16 (.312)	Dia. A + .375	+0.002/-.000	0.343	Dia. A + .001	+0.002/-.000
2.000 - 5.999	+0.000/-.002	1/4 (.250)	3/8 (.375)	Dia. A + .500	+0.003/-.000	0.412	Dia. A + .001	+0.003/-.000
6.000 +	+0.000/-.002	3/8 (.375)	5/8 (.625)	Dia. A + .750	+0.005/-.000	0.687	Dia. A + .002	+0.004/-.000

* If used with wear rings, refer to wear ring throat diameter, see [Section 9](#).

Above table reflects recommended cross-sections for rod diameters shown. Alternate cross-sections and additional sizes may be considered. Consult www.parker.com/eps/FluidPower for additional cross-sections and sizes, hardware specifications, and part number availability. Contact your Parker representative for assistance.

Piston Gland Dimensions — SL Profile



Please refer to Engineering [Section 2, page 2-8](#) for surface finish and additional hardware considerations.

Table 6-26. SL Profile — Piston Gland Calculation

B Bore Diameter		Seal		A Groove Diameter		C Groove Width	E Piston Diameter*	
Range	Tol.	Cross Section	Axial Width	Calculation	Tol.	+.015/-.000	Calculation	Tol.
1.500 - 2.499	+.002/-.000	3/16 (.187)	5/16 (.312)	Dia. A - .375	+.000/-.002	0.343	Dia. A - .001	+.000/-.002
2.500 - 7.499	+.003/-.000	1/4 (.250)	3/8 (.375)	Dia. A - .500	+.000/-.003	0.412	Dia. A - .001	+.000/-.002
7.500 +	+.004/-.000	3/8 (.375)	5/8 (.625)	Dia. A - .750	+.000/-.005	0.687	Dia. A - .002	+.000/-.002

* If used with wear rings, refer to wear ring bore diameter, see [Section 9](#).

Above table reflects recommended cross-sections for piston diameters shown. Alternate cross-sections and additional sizes may be considered. Consult www.parker.com/eps/FluidPower for additional cross-sections and sizes, hardware specifications, and part number availability. Contact your Parker representative for assistance.

Symmetrical Seal US Profile

Catalog EPS 5370/USA

US Profile, Symmetrical U-cup Seal

The Parker US profile is a symmetrical, beveled lip u-cup designed for use in hydraulic cylinder applications. The symmetrical shape allows interchangeability between rod and piston applications. A precision knife trimming process is utilized to create the beveled sealing lips. This ensures that the inside and outside diameter sealing edges provide excellent fluid wiping action. The US profile is a single acting seal. Two seals can be installed back to back, in separate grooves, to seal dual acting pistons without pressure trapping fluid between the seals. The US profile is an economical choice, available in Parker's wear resistant and extrusion resistant Molythane® compound.



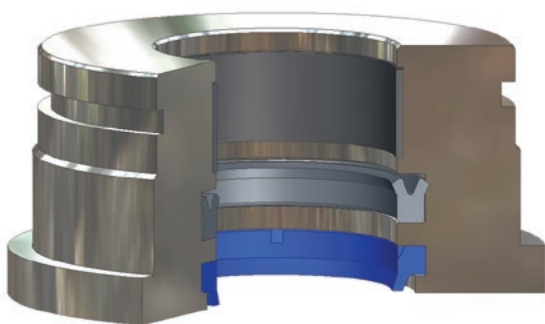
US Cross-Section

Technical Data

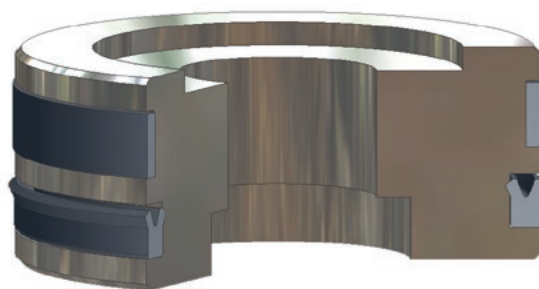
Standard Materials*	Temperature Range	Pressure Range†	Surface Speed
P4615A90	-65°F to +200°F (-54°C to +93°C)	5,000 psi (344 bar)	< 1.6 ft/s (0.5 m/s)

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

†Pressure Range without wear rings. If used with wear rings, see [Table 2-4, page 2-5](#).



US installed in Rod Gland



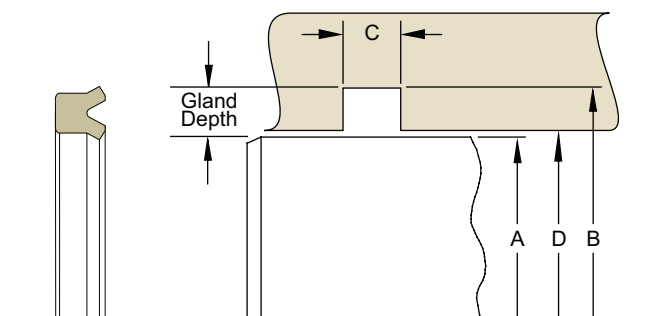
US installed in Piston Gland

Part Number Nomenclature — US Profile

Table 6-27. US Profile

4	6	1	5	US	2	5	0	0	2	5	0	0	-	3	7	5
Seal Compound 4 Digit Material Code Example: 4615 = 90A Molythane®				Profile	Gland Depth (x1000) or Seal Nominal Radial Cross-Section Example: .250 x 1000 = 250			Seal Nominal I.D. (x1000) Example: 2.500 x 1000 = 02500					-	Seal Nominal Axial Width (x1000) Example: .375 x 1000 = 375		

Rod Gland Dimensions — US Profile



Please refer to Engineering [Section 2](#),
[page 2-8](#) for surface finish and additional
hardware considerations.

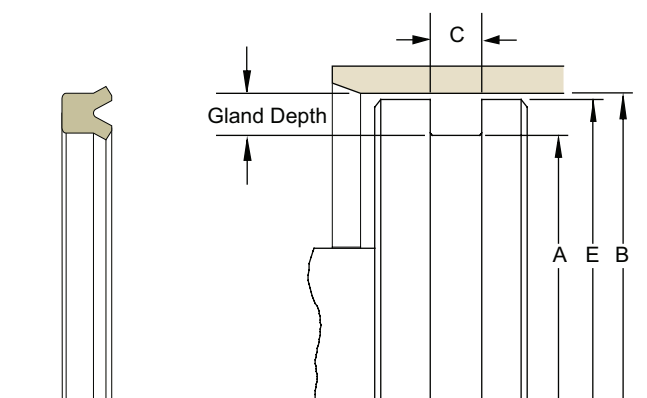
Table 6-28. US Profile — Rod Gland Calculation

A Rod Diameter		Seal		B Groove Diameter		C Groove Width	D Throat Diameter*	
Range	Tol.	Cross Section	Axial Width	Calculation	Tol.	+0.015/ -.000	Calculation	Tol.
0.062 - 0.624	+0.000/-.001	1/8 (.125)	3/16 (.187)	Dia. A + .250	+0.002/-.000	0.206	Dia. A + .001	+0.002/-.000
0.625 - 0.999	+0.000/-.001	1/8 (.125)	1/4 (.250)	Dia. A + .250	+0.002/-.000	0.275	Dia. A + .001	+0.002/-.000
1.000 - 1.499	+0.000/-.002	3/16 (.187)	5/16 (.312)	Dia. A + .375	+0.002/-.000	0.343	Dia. A + .001	+0.002/-.000
1.500 - 1.999	+0.000/-.002	3/16 (.187)	3/8 (.375)	Dia. A + .375	+0.002/-.000	0.413	Dia. A + .001	+0.002/-.000
2.000 - 3.499	+0.000/-.002	1/4 (.250)	3/8 (.375)	Dia. A + .500	+0.003/-.000	0.413	Dia. A + .001	+0.003/-.000
3.500 - 4.999	+0.000/-.002	5/16 (.312)	1/2 (.500)	Dia. A + .625	+0.004/-.000	0.550	Dia. A + .002	+0.003/-.000
5.000 +	+0.000/-.002	3/8 (.375)	5/8 (.625)	Dia. A + .750	+0.005/-.000	0.688	Dia. A + .002	+0.004/-.000

* If used with wear rings, refer to wear ring throat diameter, see [Section 9](#).

Above table reflects recommended cross-sections for Rod diameters shown. Alternate cross-sections and additional sizes may be considered. Consult www.parker.com/eps/FluidPower for additional cross-sections and sizes, hardware specifications, and part number availability. Contact your Parker representative for assistance.

Piston Gland Dimensions — US Profile



Please refer to Engineering [Section 2](#),
[page 2-8](#) for surface finish and additional
hardware considerations.

Table 6-29. US Profile — Piston Gland Calculation

B Bore Diameter		Seal		A Groove Diameter		C Groove Width	E Piston Diameter*	
Range	Tol.	Cross Section	Axial Width	Calculation	Tol.	+.015/ -.000	Calculation	Tol.
0.312 - 1.499	+.002/-.000	1/8 (.125)	1/8 (.125)	Dia. B - .250	+.000/-.002	0.138	Dia. B - .001	+.000/-.001
1.500 - 2.999	+.002/-.000	3/16 (.187)	3/16 (.187)	Dia. B - .375	+.000/-.002	0.206	Dia. B - .001	+.000/-.002
3.000 - 5.999	+.003/-.000	1/4 (.250)	1/4 (.250)	Dia. B - .500	+.000/-.003	0.275	Dia. B - .001	+.000/-.002
6.000 - 9.999	+.003/-.000	5/16 (.312)	5/16 (.312)	Dia. B - .625	+.000/-.004	0.343	Dia. B - .002	+.000/-.002
10.000 +	+.004/-.000	3/8 (.375)	3/8 (.375)	Dia. B - .750	+.000/-.005	0.413	Dia. B - .002	+.000/-.002

* If used with wear rings, refer to wear ring bore diameter, see [Section 9](#).

Above table reflects recommended cross-sections for piston diameters shown. Alternate cross-sections and additional sizes may be considered. Consult www.parker.com/eps/FluidPower for additional cross-sections and sizes, hardware specifications, and part number availability. Contact your Parker representative for assistance.

Symmetrical Seal AN6226 Profile

Catalog EPS 5370/USA

AN6226 Profile, Industrial, Standard, Light Load Rubber U-cup



Parker's AN6226 Style u-cup has a square format where the nominal cross section is equal to the height. Although widely used in the fluid power industry for low friction pneumatics, this profile was originally designed for early aircraft and ordnance service. Many units still use this type u-cup. The AN6226 profile is available in the most popular sizes per Army/Navy (AN) specifications and is made of a standard 70 Shore A nitrile compound.

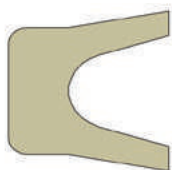
Technical Data

Standard Material*	Temperature Range	Pressure Range†		Surface Speed**
		Hydr.	Pneu.	
N4295A70	-40°F to +250°F (-40°C to +121°C)	800 psi (55 bar)	250 psi (17 bar)	< 1.6 ft/s (0.5 m/s)

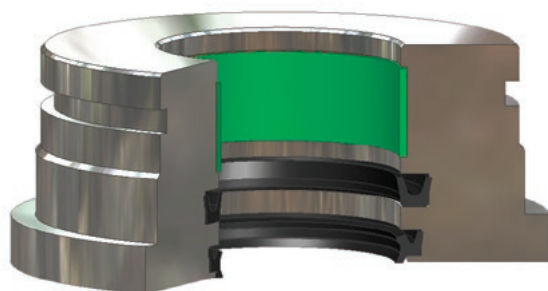
***Alternate Materials:** For applications that may require an alternate material, please contact your local Parker seal representative.

†Pressure Range without wear rings. If used with wear rings, see [Table 2-4, page 2-5](#).

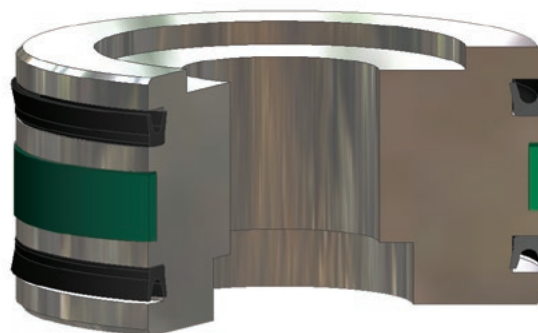
****Surface Speed** for pneumatic applications < 3.3 ft/s (1.0 m/s).



AN6226 Cross-Section



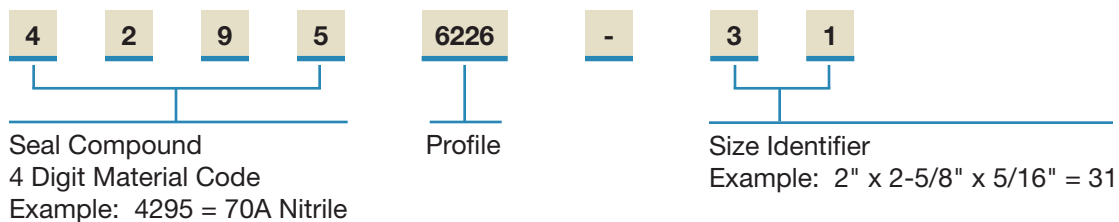
AN6226 installed in Rod Gland



AN6226 installed in Piston Gland

Part Number Nomenclature — AN6226 Profile

Table 6-30. AN6226 Profile



Gland Dimensions — AN6226 Profile – [See Appendix D](#)

