

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 and extrusion resistant Molythane[®] compound.

Technical Data

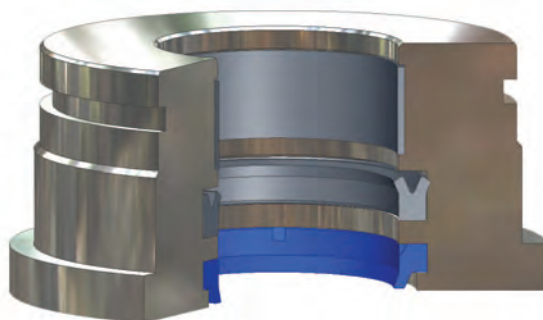
Standard Materials*	Temperature Range	Pressure Range†	Surface Speed
P4615A90	-65°F to 200°F (-54°C to 93°C)	5,000 psi (344 bar)	< 1.6 ft/s (0.5 m/s)

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

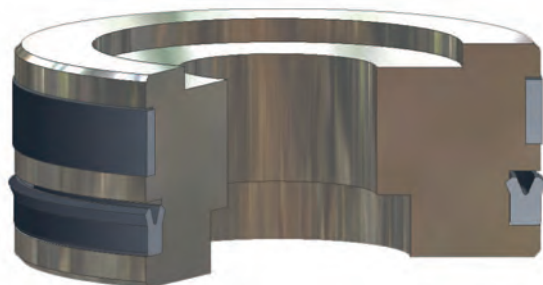
†**Pressure Range** without wear rings (see Table 2-4, page 2-5).



US Cross-Section



US installed in Rod Gland

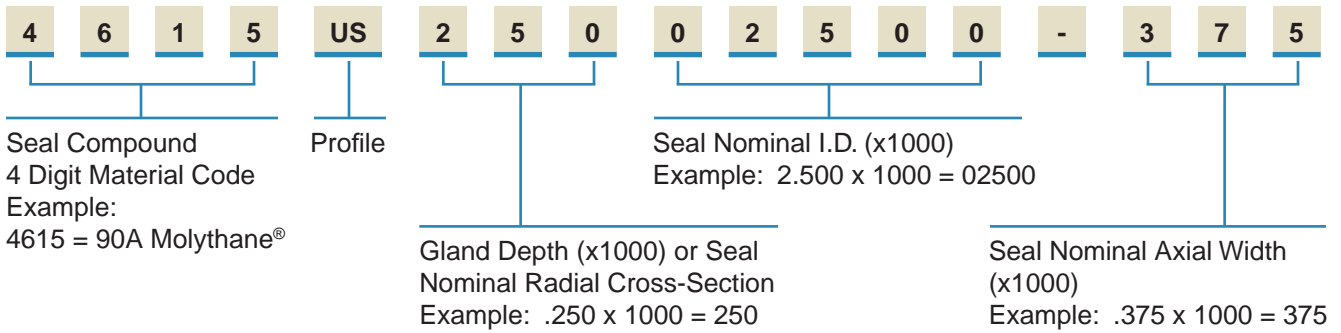


US installed in Piston Gland

09/01/07

Part Number Nomenclature — US Profile

Table 6-12. US Profile — Inch



Gland Dimensions — US Profile

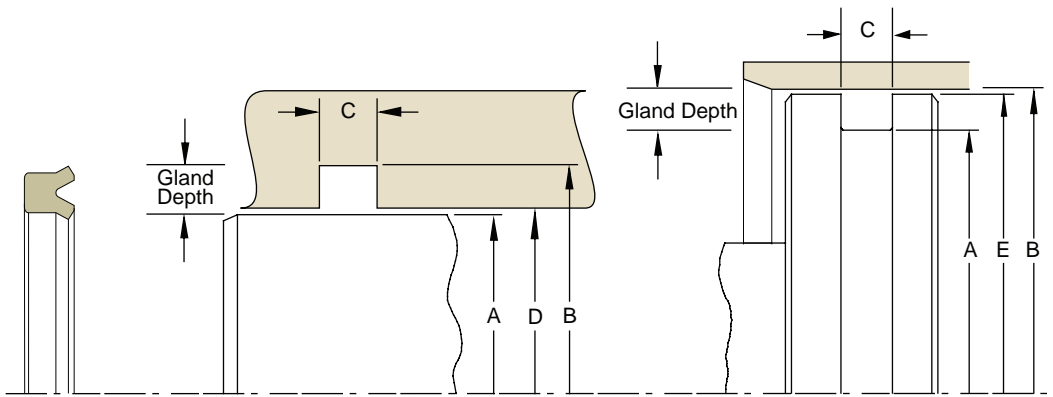


Table 6-13A. Rod Gland Dimension Tolerances

Nominal Gland Depth	A Rod Diameter	B Groove Diameter	C Groove Width	D Throat Diameter
1/8	+0.00/-0.001	+0.002/-0.000	+0.015/-0.000	+0.002/-0.000
3/16	+0.000/-0.002	+0.002/-0.000		+0.002/-0.000
1/4	+0.000/-0.002	+0.003/-0.000		+0.003/-0.000
5/16	+0.000/-0.002	+0.004/-0.000		+0.003/-0.000
3/8	+0.000/-0.002	+0.005/-0.000		+0.004/-0.000
7/16	+0.000/-0.003	+0.006/-0.000		+0.004/-0.000
1/2	+0.000/-0.003	+0.007/-0.000		+0.005/-0.000
5/8	+0.000/-0.003	+0.009/-0.000		+0.006/-0.000
3/4	+0.000/-0.004	+0.011/-0.000		+0.007/-0.000
1	+0.000/-0.005	+0.015/-0.000		+0.009/-0.000

Table 6-13B. Piston Gland Dimension Tolerances

Nominal Gland Depth	B Bore Diameter	A Groove Diameter	C Groove Width	E Piston Diameter
1/8	+0.002/-0.000	+0.000/-0.002	+0.015/-0.000	+0.000/-0.001
3/16	+0.002/-0.000	+0.000/-0.002		+0.000/-0.002
1/4	+0.003/-0.000	+0.000/-0.003		+0.000/-0.002
5/16	+0.003/-0.000	+0.000/-0.004		+0.000/-0.002
3/8	+0.004/-0.000	+0.000/-0.005		+0.000/-0.002
7/16	+0.005/-0.000	+0.000/-0.006		+0.000/-0.002
1/2	+0.005/-0.000	+0.000/-0.007		+0.000/-0.003
9/16	+0.006/-0.000	+0.000/-0.008		+0.000/-0.003
5/8	+0.006/-0.000	+0.000/-0.009		+0.000/-0.003
3/4	+0.007/-0.000	+0.000/-0.010		+0.000/-0.004
7/8	+0.008/-0.000	+0.000/-0.011	+0.000/-0.005	
1	+0.009/-0.000	+0.000/-0.012	+0.000/-0.005	

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

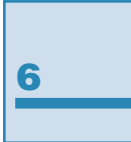


Table 6-14. US Gland Dimensions — Inch

A	B	C	D	E	Part Number
Rod Diameter	(Rod) Groove Diameter	(Rod) Groove Width	Throat Diameter*		
(Bore) Groove Diameter	Bore Diameter	(Bore) Groove Width		(Bore) Piston Diameter**	
0.093	0.343	0.138	0.094	0.342	4615US12500093-125
0.187	0.562	0.343	0.188	0.561	4615US18700187-312
0.250	0.500	0.275	0.251	0.499	4615US12500250-250
0.250	0.625	0.343	0.251	0.624	4615US18700250-312
0.250	0.750	0.343	0.251	0.749	4615US25000250-312
0.312	0.562	0.138	0.313	0.561	4615US12500312-125
0.312	0.562	0.275	0.313	0.561	4615US12500312-250
0.312	0.812	0.343	0.313	0.811	4615US25000312-312
0.312	0.812	0.413	0.313	0.811	4615US25000312-375
0.375	0.625	0.275	0.376	0.624	4615US12500375-250
0.375	0.750	0.206	0.376	0.749	4615US18700375-187
0.375	0.750	0.343	0.376	0.749	4615US18700375-312
0.375	0.875	0.343	0.376	0.874	4615US25000375-312
0.437	0.687	0.206	0.438	0.686	4615US12500437-187
0.500	0.750	0.138	0.501	0.749	4615US12500500-125
0.500	0.750	0.275	0.501	0.749	4615US12500500-250
0.500	0.875	0.275	0.501	0.874	4615US18700500-250
0.500	0.875	0.343	0.501	0.874	4615US18700500-312
0.562	0.750	0.102	0.563	0.749	4615US09300562-093
0.500	1.000	0.275	0.501	0.999	4615US25000500-250
0.562	1.062	0.275	0.563	1.061	4615US25000562-250
0.625	0.875	0.138	0.626	0.874	4615US12500625-125
0.625	0.875	0.206	0.626	0.874	4615US12500625-187
0.625	0.875	0.275	0.626	0.874	4615US12500625-250
0.625	1.000	0.275	0.626	0.999	4615US18700625-250
0.625	1.000	0.343	0.626	0.999	4615US18700625-312
0.625	1.125	0.413	0.626	1.124	4615US25000625-375
0.750	1.000	0.138	0.751	0.999	4615US12500750-125
0.750	1.000	0.206	0.751	0.999	4615US12500750-187
0.750	1.125	0.343	0.751	1.124	4615US18700750-312
0.750	1.250	0.275	0.751	1.249	4615US25000750-250
0.750	1.250	0.413	0.751	1.249	4615US25000750-375
0.812	1.062	0.275	0.813	1.061	4615US12500812-250
0.812	1.187	0.343	0.813	1.186	4615US18700812-312
0.875	1.125	0.189	0.876	1.124	4615US12500875-172
0.875	1.125	0.275	0.876	1.124	4615US12500875-250
0.875	1.250	0.275	0.876	1.249	4615US18700875-250
0.875	1.250	0.343	0.876	1.249	4615US18700875-312

*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 6-14. US Gland Dimensions — Inch (Continued)

A	B	C	D	E	Part Number
Rod Diameter	(Rod) Groove Diameter	(Rod) Groove Width	Throat Diameter*		
(Bore) Groove Diameter	Bore Diameter	(Bore) Groove Width		(Bore) Piston Diameter**	
1.000	1.250	0.138	1.001	1.249	4615US12501000-125
1.000	1.250	0.275	1.001	1.249	4615US12501000-250
1.000	1.375	0.206	1.001	1.374	4615US18701000-187
1.000	1.375	0.343	1.001	1.374	4615US18701000-312
1.000	1.500	0.275	1.001	1.499	4615US25001000-250
1.000	1.500	0.413	1.001	1.499	4615US25001000-375
1.125	1.375	0.206	1.126	1.374	4615US12501125-187
1.125	1.500	0.206	1.126	1.499	4615US18701125-187
1.125	1.500	0.275	1.126	1.499	4615US18701125-250
1.125	1.625	0.275	1.126	1.624	4615US25001125-250
1.187	1.687	0.275	1.188	1.686	4615US25001187-250
1.250	1.500	0.138	1.251	1.499	4615US12501250-125
1.250	1.500	0.206	1.251	1.499	4615US12501250-187
1.250	1.500	0.275	1.251	1.499	4615US12501250-250
1.250	1.625	0.413	1.251	1.624	4615US18701250-375
1.250	1.750	0.275	1.251	1.749	4615US25001250-250
1.250	1.750	0.413	1.251	1.749	4615US25001250-375
1.250	1.875	0.413	1.252	1.873	4615US31201250-375
1.312	1.687	0.343	1.313	1.686	4615US18701312-312
1.375	1.625	0.172	1.376	1.624	4615US12501375-156
1.375	1.625	0.206	1.376	1.624	4615US12501375-187
1.375	1.750	0.343	1.376	1.749	4615US18701375-312
1.375	1.875	0.413	1.376	1.874	4615US25001375-375
1.375	2.000	0.343	1.377	1.998	4615US31201375-312
1.500	1.750	0.206	1.501	1.749	4615US12501500-187
1.500	1.750	0.275	1.501	1.749	4615US12501500-250
1.500	1.875	0.206	1.501	1.874	4615US18701500-187
1.500	1.875	0.343	1.501	1.874	4615US18701500-312
1.500	1.875	0.413	1.501	1.874	4615US18701500-375
1.500	2.000	0.343	1.501	1.999	4615US25001500-312
1.500	2.000	0.413	1.501	1.999	4615US25001500-375
1.500	2.125	0.343	1.502	2.123	4615US31201500-312
1.625	2.000	0.206	1.626	1.999	4615US18701625-187
1.625	2.000	0.275	1.626	1.999	4615US18701625-250
1.625	2.000	0.343	1.626	1.999	4615US18701625-312
1.625	2.000	0.413	1.626	1.999	4615US18701625-375
1.750	2.000	0.138	1.751	1.999	4615US12501750-125
1.750	2.125	0.206	1.751	2.124	4615US18701750-187

*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 6-14. US Gland Dimensions — Inch (Continued)

A	B	C	D	E	Part Number
Rod Diameter	(Rod) Groove Diameter	(Rod) Groove Width	Throat Diameter*		
(Bore) Groove Diameter	Bore Diameter	(Bore) Groove Width		(Bore) Piston Diameter**	
1.750	2.125	0.275	1.751	2.124	4615US18701750-250
1.750	2.125	0.343	1.751	2.124	4615US18701750-312
1.750	2.125	0.413	1.751	2.124	4615US18701750-375
1.750	2.375	0.343	1.752	2.373	4615US31201750-312
1.875	2.250	0.308	1.876	2.249	4615US18701875-280
1.875	2.500	0.343	1.877	2.498	4615US31201875-312
1.875	2.500	0.550	1.877	2.498	4615US31201875-500
2.000	2.375	0.275	2.001	2.374	4615US18702000-250
2.000	2.375	0.343	2.001	2.374	4615US18702000-312
2.000	2.375	0.413	2.001	2.374	4615US18702000-375
2.000	2.500	0.413	2.001	2.499	4615US25002000-375
2.000	2.625	0.413	2.002	2.623	4615US31202000-375
2.125	2.500	0.206	2.126	2.499	4615US18702125-187
2.125	2.500	0.343	2.126	2.499	4615US18702125-312
2.250	2.625	0.343	2.251	2.624	4615US18702250-312
2.250	2.750	0.413	2.251	2.749	4615US25002250-375
2.250	2.875	0.550	2.252	2.873	4615US31202250-500
2.250	3.000	0.688	2.252	2.998	4615US37502250-625
2.375	2.875	0.413	2.376	2.874	4615US25002375-375
2.500	2.875	0.343	2.501	2.874	4615US18702500-312
2.500	2.875	0.413	2.501	2.874	4615US18702500-375
2.500	3.000	0.343	2.501	2.999	4615US25002500-312
2.500	3.000	0.413	2.501	2.999	4615US25002500-375
2.500	3.125	0.413	2.502	3.123	4615US31202500-375
2.625	3.000	0.413	2.626	2.999	4615US18702625-375
2.625	3.250	0.550	2.627	3.248	4615US31202625-500
2.750	3.250	0.275	2.751	3.249	4615US25002750-250
2.750	3.250	0.413	2.751	3.249	4615US25002750-375
2.750	3.500	0.413	2.752	3.498	4615US37502750-375
2.750	3.500	0.688	2.752	3.498	4615US37502750-625
3.000	3.375	0.413	3.001	3.374	4615US18703000-375
3.000	3.500	0.413	3.001	3.499	4615US25003000-375
3.125	3.500	0.413	3.126	3.499	4615US18703125-375
3.125	3.750	0.550	3.127	3.748	4615US31203125-500
3.250	3.750	0.413	3.251	3.749	4615US25003250-375
3.250	4.000	0.413	3.252	3.998	4615US37503250-375
3.250	4.000	0.481	3.252	3.998	4615US37503250-437
3.250	4.000	0.688	3.252	3.998	4615US37503250-625

*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 6-14. US Gland Dimensions — Inch (Continued)

A	B	C	D	E	Part Number
Rod Diameter	(Rod) Groove Diameter	(Rod) Groove Width	Throat Diameter*		
(Bore) Groove Diameter	Bore Diameter	(Bore) Groove Width		(Bore) Piston Diameter**	
3.500	3.875	0.413	3.501	3.874	4615US18703500-375
3.500	4.000	0.413	3.501	3.999	4615US25003500-375
3.625	4.000	0.206	3.626	3.999	4615US18703625-187
3.625	4.000	0.275	3.626	3.999	4615US18703625-250
3.625	4.000	0.413	3.626	3.999	4615US18703625-375
3.750	4.250	0.413	3.751	4.249	4615US25003750-375
3.750	4.500	0.413	3.752	4.498	4615US37503750-375
3.875	4.500	0.550	3.877	4.498	4615US31203875-500
4.000	4.375	0.413	4.001	4.374	4615US18704000-375
4.000	4.500	0.413	4.001	4.499	4615US25004000-375
4.000	4.750	0.550	4.002	4.748	4615US37504000-500
4.000	4.750	0.688	4.002	4.748	4615US37504000-625
4.000	5.000	0.688	4.002	4.998	4615US50004000-625
4.250	4.750	0.618	4.251	4.749	4615US25004250-562
4.250	5.000	0.413	4.252	4.998	4615US37504250-375
4.250	5.000	0.550	4.252	4.998	4615US37504250-500
4.250	5.000	0.688	4.252	4.998	4615US37504250-625
4.250	5.500	0.825	4.253	5.497	4615US62504250-750
4.375	5.000	0.413	4.377	4.998	4615US31204375-375
4.375	5.000	0.618	4.377	4.998	4615US31204375-562
4.500	5.000	0.413	4.501	4.999	4615US25004500-375
4.500	5.000	0.618	4.501	4.999	4615US25004500-562
4.500	5.250	0.550	4.502	5.248	4615US37504500-500
4.750	5.000	0.206	4.751	4.999	4615US12504750-187
4.750	5.500	0.688	4.752	5.498	4615US37504750-625
5.000	5.375	0.413	5.001	5.374	4615US18705000-375
5.000	5.500	0.413	5.001	5.499	4615US25005000-375
5.000	5.750	0.550	5.002	5.748	4615US37505000-500
5.250	6.000	0.413	5.252	5.998	4615US37505250-375
5.250	6.500	0.825	5.253	6.497	4615US62505250-750
5.375	6.000	0.413	5.377	5.998	4615US31205375-375
5.375	6.000	0.656	5.377	5.998	4615US31205375-596
5.375	6.000	0.688	5.377	5.998	4615US31205375-625
5.500	5.875	0.413	5.501	5.874	4615US18705500-375
5.500	6.000	0.413	5.501	5.999	4615US25005500-375
5.750	6.250	0.618	5.751	6.249	4615US25005750-562
5.750	6.500	0.550	5.752	6.498	4615US37505750-500
6.000	6.500	0.618	6.001	6.499	4615US25006000-562

*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 6-14. US Gland Dimensions — Inch (Continued)

A	B	C	D	E	Part Number
Rod Diameter	(Rod) Groove Diameter	(Rod) Groove Width	Throat Diameter*		
(Bore) Groove Diameter	Bore Diameter	(Bore) Groove Width		(Bore) Piston Diameter**	
6.250	7.000	0.413	6.252	6.998	4615US37506250-375
6.250	7.000	0.688	6.252	6.998	4615US37506250-625
6.500	7.000	0.618	6.501	6.999	4615US25006500-562
6.750	7.500	0.550	6.752	7.498	4615US37506750-500
7.000	8.000	0.825	7.002	7.998	4615US50007000-750
7.250	8.000	0.688	7.252	7.998	4615US37507250-625
7.375	8.000	0.343	7.377	7.998	4615US31207375-312
7.500	8.000	0.275	7.501	7.999	4615US25007500-250
7.500	8.000	0.618	7.501	7.999	4615US25007500-562
7.500	8.250	0.550	7.502	8.248	4615US37507500-500

*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.