

Piston Seal CP Profile

Catalog EPS 5370/USA



CP Profile, PTFE Piston Cap Seal

The Parker CP profile is a cap seal with anti-extrusion, low friction and low wear features. The CP profile is a bi-directional piston seal for use in low to medium duty applications. The CP profile retrofits into a standard size O-ring groove without modification. There are three CP profiles to match the groove width for a single O-ring, O-ring with one back-up, or an O-ring with two back-up rings. Because of the unique design of the filled PTFE cap, the CP profile offers long wear, low friction and anti-extrusion. Because of its short assembly length, only minimal gland space is needed to fit the seal on the piston. Parker's CP profile will retrofit non-Parker seals of similar design.

- CP0 — a standard O-ring groove.
- CP1 — an O-ring groove designed for one back-up ring.
- CP2 — an O-ring groove designed for two back-up rings.

The CP profile may be ordered without the energizer by omitting the energizer code. See part number nomenclature.

Technical Data

Standard Materials*	Temperature Range	Pressure Range†	Surface Speed
Cap			
0401 40% bronze filled PTFE	-200°F to 575°F (-129°C to 302°C)	3,500 psi (240 bar)	< 13 ft/s (4 m/sec)
Energizer			
A 70A Nitrile	-30°F to 250°F (-34°C to 121°C)		

***Alternate Materials:** For applications that may require an alternate material, please see Section 3 for alternate PTFE (Table 3-4) and energizer (Table 3-5) materials.

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

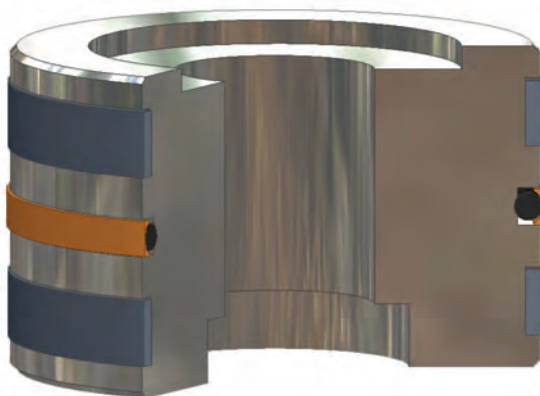


CP Cross-Section

Options

Notched side walls: Adding an "N" to the end of the part number indicates that notches are to be added to the side walls of the PTFE cap. Notches can help optimize the seal's response to fluid pressure. In application, the void created by the notch allows fluid pressure to fill the cavity between the side face of the gland and the seal. Consult your local Parker Seal representative for the availability and cost to add side notches to the CP profile.

N = Notched walls 

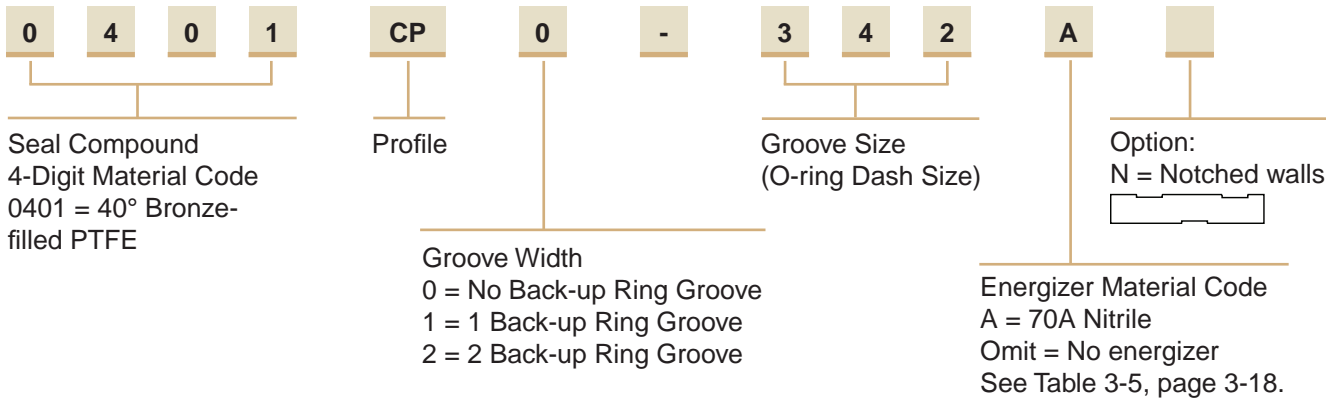


CP installed in Piston Gland

09/01/07

Part Number Nomenclature — CP Profile

Table 7-50. CP Profile — Inch



Gland Dimension — CP Profile

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

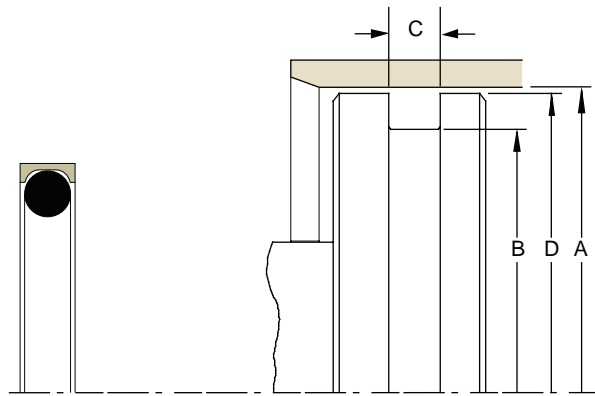


Table 7-51. CP Gland Dimensions — Inch

A Bore Diameter	B Groove Diameter	C Groove Width (CP0)	C Groove Width (CP1)	C Groove Width (CP2)	D Piston Diameter* 5000 psi (345 bar)	O-ring Dash Number	CP Part Number (X = Groove Width of 0, 1 or 2)
+0.002/-0.000	+0.000/-0.002	+0.005/-0.000	+0.005/-0.000	+0.005/-0.000	+0.000/-0.001		
0.250	0.140	0.093	0.138	0.205	0.249	006	0401CPX-006A
0.281	0.171	0.093	0.138	0.205	0.280	007	0401CPX-007A
0.312	0.202	0.093	0.138	0.205	0.311	008	0401CPX-008A
0.344	0.234	0.093	0.138	0.205	0.343	009	0401CPX-009A
0.375	0.265	0.093	0.138	0.205	0.374	010	0401CPX-010A
0.437	0.327	0.093	0.138	0.205	0.436	011	0401CPX-011A
0.500	0.390	0.093	0.138	0.205	0.499	012	0401CPX-012A
0.562	0.452	0.093	0.138	0.205	0.560	013	0401CPX-013A
0.625	0.515	0.093	0.138	0.205	0.623	014	0401CPX-014A
0.687	0.577	0.093	0.138	0.205	0.685	015	0401CPX-015A
0.750	0.640	0.093	0.138	0.205	0.748	016	0401CPX-016A
0.812	0.702	0.093	0.138	0.205	0.810	017	0401CPX-017A
0.875	0.765	0.093	0.138	0.205	0.873	018	0401CPX-018A
0.937	0.827	0.093	0.138	0.205	0.935	019	0401CPX-019A
1.000	0.890	0.093	0.138	0.205	0.998	020	0401CPX-020A
1.062	0.952	0.093	0.138	0.205	1.060	021	0401CPX-021A
1.125	1.015	0.093	0.138	0.205	1.123	022	0401CPX-022A
1.187	1.077	0.093	0.138	0.205	1.185	023	0401CPX-023A
1.250	1.140	0.093	0.138	0.205	1.248	024	0401CPX-024A

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



CP Profile

Table 7-51. CP Gland Dimensions — Inch (Continued)

A Bore Diameter	B Groove Diameter	C Groove Width (CP0)	C Groove Width (CP1)	C Groove Width (CP2)	D Piston Diameter* 5000 psi (345 bar)	O-ring Dash Number	CP Part Number (X = Groove Width of 0, 1 or 2)
+.002/-0.000	+.000/-0.002	+.005/-0.000	+.005/-0.000	+.005/-0.000	+.00/-0.001		
1.312	1.202	0.093	0.138	0.205	1.310	025	0401CPX-025A
1.375	1.265	0.093	0.138	0.205	1.373	026	0401CPX-026A
1.437	1.327	0.093	0.138	0.205	1.435	027	0401CPX-027A
1.500	1.390	0.093	0.138	0.205	1.498	028	0401CPX-028A
+.002/-0.000	+.000/-0.002	+.005/-0.000	+.005/-0.000	+.005/-0.000	+.000/-0.002		
0.312	0.136	0.140	0.171	0.238	0.311	104	0401CPX-104A
0.343	0.167	0.140	0.171	0.238	0.342	105	0401CPX-105A
0.375	0.199	0.140	0.171	0.238	0.374	106	0401CPX-106A
0.406	0.230	0.140	0.171	0.238	0.405	107	0401CPX-107A
0.437	0.261	0.140	0.171	0.238	0.436	108	0401CPX-108A
0.500	0.324	0.140	0.171	0.238	0.499	109	0401CPX-109A
0.562	0.386	0.140	0.171	0.238	0.561	110	0401CPX-110A
0.625	0.449	0.140	0.171	0.238	0.624	111	0401CPX-111A
0.687	0.511	0.140	0.171	0.238	0.686	112	0401CPX-112A
0.750	0.574	0.140	0.171	0.238	0.749	113	0401CPX-113A
0.812	0.636	0.140	0.171	0.238	0.811	114	0401CPX-114A
0.875	0.699	0.140	0.171	0.238	0.874	115	0401CPX-115A
0.937	0.761	0.140	0.171	0.238	0.936	116	0401CPX-116A
1.000	0.824	0.140	0.171	0.238	0.999	117	0401CPX-117A
1.062	0.886	0.140	0.171	0.238	1.061	118	0401CPX-118A
1.125	0.949	0.140	0.171	0.238	1.124	119	0401CPX-119A
1.187	1.011	0.140	0.171	0.238	1.186	120	0401CPX-120A
1.250	1.074	0.140	0.171	0.238	1.249	121	0401CPX-121A
1.312	1.136	0.140	0.171	0.238	1.311	122	0401CPX-122A
1.375	1.199	0.140	0.171	0.238	1.374	123	0401CPX-123A
1.437	1.261	0.140	0.171	0.238	1.436	124	0401CPX-124A
1.500	1.324	0.140	0.171	0.238	1.499	125	0401CPX-125A
1.562	1.386	0.140	0.171	0.238	1.561	126	0401CPX-126A
1.625	1.449	0.140	0.171	0.238	1.624	127	0401CPX-127A
1.687	1.511	0.140	0.171	0.238	1.686	128	0401CPX-128A
1.750	1.574	0.140	0.171	0.238	1.749	129	0401CPX-129A
1.812	1.636	0.140	0.171	0.238	1.810	130	0401CPX-130A
1.875	1.699	0.140	0.171	0.238	1.873	131	0401CPX-131A
1.937	1.761	0.140	0.171	0.238	1.935	132	0401CPX-132A
2.000	1.824	0.140	0.171	0.238	1.998	133	0401CPX-133A
2.062	1.886	0.140	0.171	0.238	2.060	134	0401CPX-134A
2.125	1.949	0.140	0.171	0.238	2.123	135	0401CPX-135A
2.187	2.011	0.140	0.171	0.238	2.185	136	0401CPX-136A
2.250	2.074	0.140	0.171	0.238	2.248	137	0401CPX-137A
2.312	2.136	0.140	0.171	0.238	2.310	138	0401CPX-138A
2.375	2.199	0.140	0.171	0.238	2.373	139	0401CPX-139A
2.437	2.261	0.140	0.171	0.238	2.435	140	0401CPX-140A
+.002/-0.000	+.000/-0.002	+.005/-0.000	+.005/-0.000	.005/-0.000	+.000/-0.003		
2.500	2.324	0.140	0.171	0.238	2.498	141	0401CPX-141A
2.562	2.386	0.140	0.171	0.238	2.560	142	0401CPX-142A
2.625	2.449	0.140	0.171	0.238	2.623	143	0401CPX-143A
2.687	2.511	0.140	0.171	0.238	2.685	144	0401CPX-144A
2.750	2.574	0.140	0.171	0.238	2.748	145	0401CPX-145A
2.812	2.636	0.140	0.171	0.238	2.810	146	0401CPX-146A

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



Table 7-51. CP Gland Dimensions — Inch (Continued)

A Bore Diameter	B Groove Diameter	C Groove Width (CP0)	C Groove Width (CP1)	C Groove Width (CP2)	D Piston Diameter* 5000 psi (345 bar)	O-ring Dash Number	CP Part Number (X = Groove Width of 0, 1 or 2)
+0.002/-0.000	+0.000/-0.002	+0.005/-0.000	+0.005/-0.000	.005/-0.000	+0.000/-0.003		
2.875	2.699	0.140	0.171	0.238	2.873	147	0401CPX-147A
2.937	2.761	0.140	0.171	0.238	2.935	148	0401CPX-148A
3.000	2.824	0.140	0.171	0.238	2.998	149	0401CPX-149A
+0.002/-0.000	+0.000/-0.002	+0.005/-0.000	+0.005/-0.000	+0.005/-0.000	+0.000/-0.002		
0.437	0.195	0.187	0.208	0.275	0.436	201	0401CPX-201A
0.500	0.258	0.187	0.208	0.275	0.499	202	0401CPX-202A
0.562	0.320	0.187	0.208	0.275	0.561	203	0401CPX-203A
0.625	0.383	0.187	0.208	0.275	0.624	204	0401CPX-204A
0.687	0.445	0.187	0.208	0.275	0.686	205	0401CPX-205A
0.750	0.508	0.187	0.208	0.275	0.749	206	0401CPX-206A
0.812	0.570	0.187	0.208	0.275	0.811	207	0401CPX-207A
0.875	0.633	0.187	0.208	0.275	0.874	208	0401CPX-208A
0.937	0.695	0.187	0.208	0.275	0.936	209	0401CPX-209A
1.000	0.758	0.187	0.208	0.275	0.999	210	0401CPX-210A
1.062	0.820	0.187	0.208	0.275	1.061	211	0401CPX-211A
1.125	0.883	0.187	0.208	0.275	1.124	212	0401CPX-212A
1.187	0.945	0.187	0.208	0.275	1.186	213	0401CPX-213A
1.250	1.008	0.187	0.208	0.275	1.249	214	0401CPX-214A
1.312	1.070	0.187	0.208	0.275	1.311	215	0401CPX-215A
1.375	1.133	0.187	0.208	0.275	1.374	216	0401CPX-216A
1.437	1.195	0.187	0.208	0.275	1.436	217	0401CPX-217A
1.500	1.258	0.187	0.208	0.275	1.499	218	0401CPX-218A
1.562	1.320	0.187	0.208	0.275	1.561	219	0401CPX-219A
1.625	1.383	0.187	0.208	0.275	1.624	220	0401CPX-220A
1.687	1.445	0.187	0.208	0.275	1.686	221	0401CPX-221A
1.750	1.508	0.187	0.208	0.275	1.749	222	0401CPX-222A
1.875	1.633	0.187	0.208	0.275	1.873	223	0401CPX-223A
2.000	1.758	0.187	0.208	0.275	1.998	224	0401CPX-224A
2.125	1.883	0.187	0.208	0.275	2.123	225	0401CPX-225A
2.250	2.008	0.187	0.208	0.275	2.248	226	0401CPX-226A
2.375	2.133	0.187	0.208	0.275	2.373	227	0401CPX-227A
+0.002/-0.000	+0.000/-0.002	+0.005/-0.000	+0.005/-0.000	+0.0005/-0.000	+0.000/-0.003		
2.500	2.258	0.187	0.208	0.275	2.498	228	0401CPX-228A
2.625	2.383	0.187	0.208	0.275	2.623	229	0401CPX-229A
2.750	2.508	0.187	0.208	0.275	2.748	230	0401CPX-230A
2.875	2.633	0.187	0.208	0.275	2.873	231	0401CPX-231A
3.000	2.758	0.187	0.208	0.275	2.998	232	0401CPX-232A
3.125	2.883	0.187	0.208	0.275	3.123	233	0401CPX-233A
3.250	3.008	0.187	0.208	0.275	3.248	234	0401CPX-234A
3.375	3.133	0.187	0.208	0.275	3.373	235	0401CPX-235A
3.500	3.258	0.187	0.208	0.275	3.498	236	0401CPX-236A
3.625	3.383	0.187	0.208	0.275	3.623	237	0401CPX-237A
3.750	3.508	0.187	0.208	0.275	3.748	238	0401CPX-238A
3.875	3.633	0.187	0.208	0.275	3.873	239	0401CPX-239A
4.000	3.758	0.187	0.208	0.275	3.998	240	0401CPX-240A
4.125	3.883	0.187	0.208	0.275	4.123	241	0401CPX-241A
4.250	4.008	0.187	0.208	0.275	4.248	242	0401CPX-242A
4.375	4.133	0.187	0.208	0.275	4.373	243	0401CPX-243A
4.500	4.258	0.187	0.208	0.275	4.497	244	0401CPX-244A

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

Table 7-51. CP Gland Dimensions — Inch (Continued)

A Bore Diameter	B Groove Diameter	C Groove Width (CP0)	C Groove Width (CP1)	C Groove Width (CP2)	D Piston Diameter* 5000 psi (345 bar)	O-ring Dash Number	CP Part Number (X = Groove Width of 0, 1 or 2)
+0.002/-0.000	+0.000/-0.002	+0.005/-0.000	+0.005/-0.000	+0.0005/-0.000	+0.000/-0.003		
4.625	4.383	0.187	0.208	0.275	4.622	245	0401CPX-245A
4.750	4.508	0.187	0.208	0.275	4.747	246	0401CPX-246A
4.875	4.633	0.187	0.208	0.275	4.872	247	0401CPX-247A
5.000	4.758	0.187	0.208	0.275	4.997	248	0401CPX-248A
+0.002/-0.000	+0.000/-0.002	+0.005/-0.000	+0.005/-0.000	+0.005/-0.000	+0.000/-0.002		
0.812	0.442	0.281	0.311	0.410	0.810	309	0401CPX-309A
0.875	0.505	0.281	0.311	0.410	0.873	310	0401CPX-310A
0.937	0.567	0.281	0.311	0.410	0.935	311	0401CPX-311A
1.000	0.630	0.281	0.311	0.410	0.998	312	0401CPX-312A
1.062	0.692	0.281	0.311	0.410	1.060	313	0401CPX-313A
1.125	0.755	0.281	0.311	0.410	1.123	314	0401CPX-314A
1.187	0.817	0.281	0.311	0.410	1.185	315	0401CPX-315A
1.250	0.880	0.281	0.311	0.410	1.248	316	0401CPX-316A
1.312	0.942	0.281	0.311	0.410	1.310	317	0401CPX-317A
1.375	1.005	0.281	0.311	0.410	1.373	318	0401CPX-318A
1.437	1.067	0.281	0.311	0.410	1.435	319	0401CPX-319A
1.500	1.130	0.281	0.311	0.410	1.498	320	0401CPX-320A
1.562	1.192	0.281	0.311	0.410	1.560	321	0401CPX-321A
1.625	1.255	0.281	0.311	0.410	1.623	322	0401CPX-322A
1.687	1.317	0.281	0.311	0.410	1.685	323	0401CPX-323A
1.750	1.380	0.281	0.311	0.410	1.748	324	0401CPX-324A
1.875	1.505	0.281	0.311	0.410	1.873	325	0401CPX-325A
2.000	1.630	0.281	0.311	0.410	1.998	326	0401CPX-326A
2.125	1.755	0.281	0.311	0.410	2.123	327	0401CPX-327A
2.250	1.880	0.281	0.311	0.410	2.248	328	0401CPX-328A
2.375	2.005	0.281	0.311	0.410	2.373	329	0401CPX-329A
+0.002/-0.000	+0.000/-0.002	+0.005/-0.000	+0.005/-0.000	+0.005/-0.000	+0.000/-0.003		
2.500	2.130	0.281	0.311	0.410	2.498	330	0401CPX-330A
2.625	2.255	0.281	0.311	0.410	2.623	331	0401CPX-331A
2.750	2.380	0.281	0.311	0.410	2.748	332	0401CPX-332A
2.875	2.505	0.281	0.311	0.410	2.873	333	0401CPX-333A
3.000	2.630	0.281	0.311	0.410	2.998	334	0401CPX-334A
3.125	2.755	0.281	0.311	0.410	3.123	335	0401CPX-335A
3.250	2.880	0.281	0.311	0.410	3.248	336	0401CPX-336A
3.375	3.005	0.281	0.311	0.410	3.373	337	0401CPX-337A
3.500	3.130	0.281	0.311	0.410	3.498	338	0401CPX-338A
3.625	3.255	0.281	0.311	0.410	3.623	339	0401CPX-339A
3.750	3.380	0.281	0.311	0.410	3.748	340	0401CPX-340A
3.875	3.505	0.281	0.311	0.410	3.873	341	0401CPX-341A
4.000	3.630	0.281	0.311	0.410	3.998	342	0401CPX-342A
4.125	3.755	0.281	0.311	0.410	4.123	343	0401CPX-343A
4.250	3.880	0.281	0.311	0.410	4.247	344	0401CPX-344A
4.375	4.005	0.281	0.311	0.410	4.372	345	0401CPX-345A
+0.002/-0.000	+0.000/-0.002	+0.005/-0.000	+0.005/-0.000	+0.005/-0.000	+0.000/-0.003		
4.500	4.130	0.281	0.311	0.410	4.497	346	0401CPX-346A
4.625	4.255	0.281	0.311	0.410	4.622	347	0401CPX-347A
4.750	4.380	0.281	0.311	0.410	4.747	348	0401CPX-348A
4.875	4.505	0.281	0.311	0.410	4.872	349	0401CPX-349A
5.000	4.630	0.281	0.311	0.410	4.997	350	0401CPX-350A

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

Table 7-51. CP Gland Dimensions — Inch (Continued)

A Bore Diameter	B Groove Diameter	C Groove Width (CP0)	C Groove Width (CP1)	C Groove Width (CP2)	D Piston Diameter* 5000 psi (345 bar)	O-ring Dash Number	CP Part Number (X = Groove Width of 0, 1 or 2)
+ .002/- .000	+ .000/- .002	+ .005/- .000	+ .005/- .000	+ .005/- .000	+ .000/- .004		
5.000	4.526	0.375	0.408	0.538	4.997	425	0401CPX-425A
5.125	4.651	0.375	0.408	0.538	5.122	426	0401CPX-426A
5.250	4.776	0.375	0.408	0.538	5.247	427	0401CPX-427A
5.375	4.901	0.375	0.408	0.538	5.372	428	0401CPX-428A
5.500	5.026	0.375	0.408	0.538	5.497	429	0401CPX-429A
5.625	5.151	0.375	0.408	0.538	5.622	430	0401CPX-430A
5.750	5.276	0.375	0.408	0.538	5.747	431	0401CPX-431A
5.875	5.401	0.375	0.408	0.538	5.872	432	0401CPX-432A
6.000	5.526	0.375	0.408	0.538	5.997	433	0401CPX-433A
6.125	5.651	0.375	0.408	0.538	6.122	434	0401CPX-434A
6.250	5.776	0.375	0.408	0.538	6.247	435	0401CPX-435A
6.375	5.901	0.375	0.408	0.538	6.372	436	0401CPX-436A
6.500	6.026	0.375	0.408	0.538	6.497	437	0401CPX-437A
6.750	6.276	0.375	0.408	0.538	6.747	438	0401CPX-438A
7.000	6.526	0.375	0.408	0.538	6.997	439	0401CPX-439A
7.250	6.776	0.375	0.408	0.538	7.247	440	0401CPX-440A
7.500	7.026	0.375	0.408	0.538	7.497	441	0401CPX-441A
7.750	7.276	0.375	0.408	0.538	7.747	442	0401CPX-442A
8.000	7.526	0.375	0.408	0.538	7.997	443	0401CPX-443A
8.250	7.776	0.375	0.408	0.538	8.247	444	0401CPX-444A
8.500	8.026	0.375	0.408	0.538	8.497	445	0401CPX-445A
9.000	8.526	0.375	0.408	0.538	8.996	446	0401CPX-446A
9.500	9.026	0.375	0.408	0.538	9.496	447	0401CPX-447A
10.000	9.526	0.375	0.408	0.538	9.996	448	0401CPX-448A
10.500	10.026	0.375	0.408	0.538	10.496	449	0401CPX-449A
11.000	10.526	0.375	0.408	0.538	10.996	450	0401CPX-450A
11.500	11.026	0.375	0.408	0.538	11.496	451	0401CPX-451A
12.000	11.526	0.375	0.408	0.538	11.996	452	0401CPX-452A
12.500	12.026	0.375	0.408	0.538	12.496	453	0401CPX-453A
13.000	12.526	0.375	0.408	0.538	12.996	454	0401CPX-454A
13.500	13.026	0.375	0.408	0.538	13.496	455	0401CPX-455A
14.000	13.526	0.375	0.408	0.538	13.996	456	0401CPX-456A
14.500	14.026	0.375	0.408	0.538	14.496	457	0401CPX-457A
15.000	14.526	0.375	0.408	0.538	14.996	458	0401CPX-458A
15.500	15.026	0.375	0.408	0.538	15.496	459	0401CPX-459A
16.000	15.526	0.375	0.408	0.538	15.996	460	0401CPX-460A

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

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

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