

T-Seal



**The simple 3-piece solution
for high pressure applications**

Description

The T-Seal is a perfect replacement for an O-Ring in any high-pressure application. It provides excellent sealing performance in both double and single acting applications. The T-Seal can be used in almost any oil and gas application. With a multitude of materials to select from, you can cover a wide range of temperatures and resist a variety of different medias. The T-Seal fits into the same simple groove as an O-ring and eliminates rolling or spiralling, even under long stroke or dry rod conditions. It does not wedge into clearances or pinch off under motion or pressure and has good low-pressure sealing capabilities.

Applications

- Directional tools
- Choke valves
- Actuators and control modules
- Flow control
- Blow-Out Preventers (BOPs)
- Completion tools
- Fishing and jar tools
- Gas lifts

Features

- Excellent stability in the groove
- Profile design prevents spiralling in the groove during installation and while in service
- 3-piece design with split back-up rings enables easy installation.
- Excellent temperature variability with multiple material selections
- Excellent bi-directional seal
- Fits in all AS568 O-Ring grooves

Technical Data









Operating Pressure: 20,000 psi for static applications. 15,000 psi for dynamic applications.

Speed: 3.3 ft/s or higher for non-continuous or intermittent use.

Temperature range: -45 °C to +232 °C depending on elastomer.

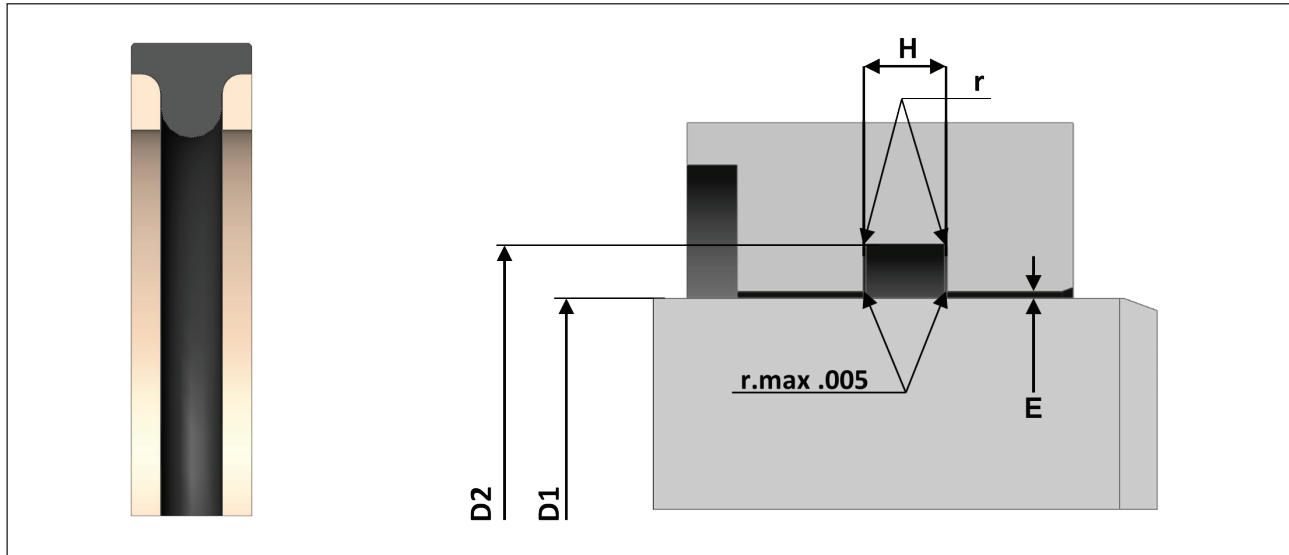
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Available Materials

Elastomer Sealing Element				
Material	Description	Temperature Range	Data Sheets	Material Code
Standard Grade Viton®	FKM type A commercial grade compound. Off the shelf, low cost, and highly accessible Viton® compound.	-20°C to +205°C -4°F to 400°F		V
Aflas®	Aflas® is becoming more and more of a staple in the oil and gas sector. Mostly because of its excellent steam resistance. Aflas® also offers resistance to acids and bases, amines and H2S resistance, Ozone and is resistant to highly reactive organic and inorganic chemicals.	-4 to 232°C 25°F to 450°F		A
Standard Grade HNBR	A general applications HNBR compound. HSN provides good chemical resistance to crude oil, lubricating agents and oil additives with superior resistance to carbon dioxide, water, drilling mud and amine corrosion inhibitors. HSN is off the shelf, low cost, and highly accessible HNBR compound.	-40°C to 160°C -40°F to 325°F		H
Standard Grade NBR (BUNA)	Low-cost general-purpose compound. Even with its low cost, Nitrile still offers good resistance to compression set and tear/abrasion. Nitrile is resistant to many petroleum oils/greases, hydraulic fluids, alcohol, ambient water, silicone greases, Diester base lubricants and ethylene-glycol based fluids.	-35°C to +120°C -30°F to +250°F		N
Viton™ Extreme™	Viton™ ETP-600S provides excellent resistance to low molecular weight esters, ketones, and aldehydes. Additionally, Viton™ Extreme™ ETP-600S is inherently resistant to attack by high pH fluids and base materials. This enables hoses, seals, gaskets, or O-rings made with Viton™ Extreme™ fluoroelastomers to not swell in volume or lose their elastomeric properties in highly caustic solutions and amines.	-20°C to +225°C -4°F to 437°F		EE7749
Anti-Extrusion Ring				
Material	Description	Temperature Range	Data Sheets	Material Code
Unfilled PEEK	Virgin PEEK. Offers good toughness and impact performance, with high elongation properties. Certified to ISO 23936/NORSOK M-710 for high sour fluid aging	-70°C to 260°C -94°F to 500°F		P
Glass Filled PEEK	Glass Filled PEEK. Same features as virgin PEEK, but with higher tensile strength than virgin PEEK, as well as increased shear strength.	-70°C to 260°C -94°F to 500°F		GP
Teflon	Standard grade unfilled PTFE materials. Offers excellent chemical compatibility and temperature range.	-200 °C to 260 °C -328 °F to 500 °F		T

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Hardware And Part Number Information for Rod T-Seals



Dimensional table. Rod-Inch

K.C. Seals Part Number	Bore D1 Tol: +/- .002	Groove D2 Tol: +/- .004	Groove Width H	Corner Radii r	Radial Clearance *E _{max.}		
					1.500 psi (10 MPa)	3.000 psi (20 MPa)	5.800 psi (40 MPa)
TRO 006	.125	.236	.093/.101	.005/.015	.004	.003	.002
TRO 007	.156	.267	.093/.101	.005/.015	.004	.003	.002
TRO 008	.187	.298	.093/.101	.005/.015	.004	.003	.002
TRO 009	.219	.330	.093/.101	.005/.015	.004	.003	.002
TRO 010	.250	.361	.093/.101	.005/.015	.004	.003	.002
TRO 011	.312	.423	.093/.101	.005/.015	.004	.003	.002
TRO 012	.375	.486	.093/.101	.005/.015	.004	.003	.002
TRO 110	.375	.553	.140/.148	.005/.015	.006	.004	.003
TRO 111	.437	.615	.140/.148	.005/.015	.006	.004	.003
TRO 112	.500	.678	.140/.148	.005/.015	.006	.004	.003
TRO 113	.562	.740	.140/.148	.005/.015	.006	.004	.003
TRO 114	.625	.803	.140/.148	.005/.015	.006	.004	.003
TRO 115	.687	.865	.140/.148	.005/.015	.006	.004	.003
TRO 116	.750	.928	.140/.148	.005/.015	.006	.004	.003
TRO 210	.750	.994	.187/.195	.010/.025	.008	.006	.003
TRO 211	.812	1.056	.187/.195	.010/.025	.008	.006	.003
TRO 212	.875	1.119	.187/.195	.010/.025	.008	.006	.003
TRO 213	.937	1.181	.187/.195	.010/.025	.008	.006	.003
TRO 214	1.000	1.244	.187/.195	.010/.025	.008	.006	.003
TRO 215	1.062	1.306	.187/.195	.010/.025	.008	.006	.003

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TRO 216	1.125	1.369	.187/.195	.010/.025	.008	.006	.003
TRO 217	1.187	1.431	.187/.195	.010/.025	.008	.006	.003
TRO 218	1.250	1.494	.187/.195	.010/.025	.008	.006	.003
TRO 219	1.312	1.556	.187/.195	.010/.025	.008	.006	.003
TRO 220	1.375	1.619	.187/.195	.010/.025	.008	.006	.003
TRO 221	1.437	1.681	.187/.195	.010/.025	.008	.006	.003
TRO 222	1.500	1.744	.187/.195	.010/.025	.008	.006	.003
TRO 325	1.500	1.872	.281/.289	.020/.035	.010	.008	.004
TRO 326	1.625	1.997	.281/.289	.020/.035	.010	.008	.004
TRO 327	1.750	2.122	.281/.289	.020/.035	.010	.008	.004
TRO 328	1.875	2.247	.281/.289	.020/.035	.010	.008	.004
TRO 329	2.000	2.372	.281/.289	.020/.035	.010	.008	.004
TRO 330	2.125	2.497	.281/.289	.020/.035	.010	.008	.004
TRO 331	2.250	2.622	.281/.289	.020/.035	.010	.008	.004
TRO 332	2.375	2.747	.281/.289	.020/.035	.010	.008	.004
TRO 333	2.500	2.872	.281/.289	.020/.035	.010	.008	.004
TRO 334	2.625	2.997	.281/.289	.020/.035	.010	.008	.004
TRO 335	2.750	3.122	.281/.289	.020/.035	.010	.008	.004
TRO 336	2.875	3.247	.281/.289	.020/.035	.010	.008	.004
TRO 337	3.000	3.372	.281/.289	.020/.035	.010	.008	.004
TRO 338	3.125	3.497	.281/.289	.020/.035	.010	.008	.004
TRO 339	3.250	3.622	.281/.289	.020/.035	.010	.008	.004
TRO 340	3.375	3.747	.281/.289	.020/.035	.010	.008	.004
TRO 341	3.500	3.872	.281/.289	.020/.035	.010	.008	.004
TRO 342	3.625	3.997	.281/.289	.020/.035	.010	.008	.004
TRO 343	3.750	4.122	.281/.289	.020/.035	.010	.008	.004
TRO 344	3.875	4.247	.281/.289	.020/.035	.010	.008	.004
TRO 345	4.000	4.372	.281/.289	.020/.035	.010	.008	.004
TRO 346	4.125	4.497	.281/.289	.020/.035	.010	.008	.004
TRO 347	4.250	4.622	.281/.289	.020/.035	.010	.008	.004
TRO 348	4.375	4.747	.281/.289	.020/.035	.010	.008	.004
TRO 349	4.500	4.872	.281/.289	.020/.035	.010	.008	.004
TRO 425	4.500	4.977	.375/.383	.020/.035	.012	.010	.006
TRO 426	4.625	5.102	.375/.383	.020/.035	.012	.010	.006
TRO 427	4.750	5.227	.375/.383	.020/.035	.012	.010	.006
TRO 428	4.875	5.352	.375/.383	.020/.035	.012	.010	.006
TRO 429	5.000	5.477	.375/.383	.020/.035	.012	.010	.006
TRO 430	5.125	5.602	.375/.383	.020/.035	.012	.010	.006
TRO 431	5.250	5.727	.375/.383	.020/.035	.012	.010	.006
TRO 432	5.375	5.852	.375/.383	.020/.035	.012	.010	.006
TRO 433	5.500	5.977	.375/.383	.020/.035	.012	.010	.006
TRO 434	5.625	6.102	.375/.383	.020/.035	.012	.010	.006
TRO 435	5.750	6.227	.375/.383	.020/.035	.012	.010	.006
TRO 436	5.875	6.352	.375/.383	.020/.035	.012	.010	.006
TRO 437	6.000	6.477	.375/.383	.020/.035	.012	.010	.006

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TRO 438	6.250	6.727	.375/.383	.020/.035	.012	.010	.006
TRO 439	6.500	6.977	.375/.383	.020/.035	.012	.010	.006
TRO 440	6.750	7.227	.375/.383	.020/.035	.012	.010	.006
TRO 441	7.000	7.477	.375/.383	.020/.035	.012	.010	.006
TRO 442	7.250	7.727	.375/.383	.020/.035	.012	.010	.006
TRO 443	7.500	7.977	.375/.383	.020/.035	.012	.010	.006
TRO 444	7.750	8.227	.375/.383	.020/.035	.012	.010	.006
TRO 445	8.000	8.477	.375/.383	.020/.035	.012	.010	.006
TRO 446	8.500	8.977	.375/.383	.020/.035	.012	.010	.006
TRO 447	9.000	9.477	.375/.383	.020/.035	.012	.010	.006
TRO 448	9.500	9.977	.375/.383	.020/.035	.012	.010	.006
TRO 449	10.000	10.477	.375/.383	.020/.035	.012	.010	.006
TRO 450	10.500	10.977	.375/.383	.020/.035	.012	.010	.006
TRO 451	11.000	11.477	.375/.383	.020/.035	.012	.010	.006
TRO 452	11.500	11.977	.375/.383	.020/.035	.012	.010	.006
TRO 453	12.000	12.477	.375/.383	.020/.035	.012	.010	.006
TRO 454	12.500	12.977	.375/.383	.020/.035	.012	.010	.006
TRO 455	13.000	13.477	.375/.383	.020/.035	.012	.010	.006
TRO 456	13.500	13.977	.375/.383	.020/.035	.012	.010	.006
TRO 457	14.000	14.477	.375/.383	.020/.035	.012	.010	.006
TRO 458	14.500	14.977	.375/.383	.020/.035	.012	.010	.006
TRO 459	15.000	15.477	.375/.383	.020/.035	.012	.010	.006
TRO 460	15.500	15.977	.375/.383	.020/.035	.012	.010	.006

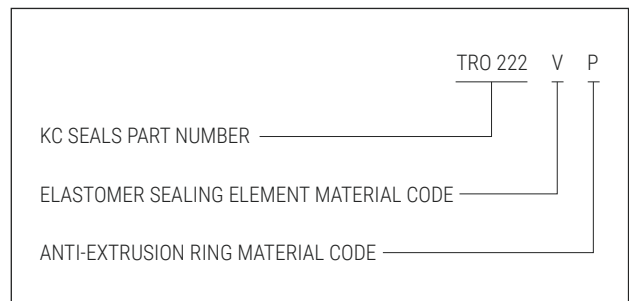
Custom Dimensions

For dimensions housing dimensions that are not listed, KC Seals would either require a T-Seal 2D drawing or 3D model.

Or we can also machine a T-Seal to your own metal work dimensions should they provide enough room to house the T-Seal profile.

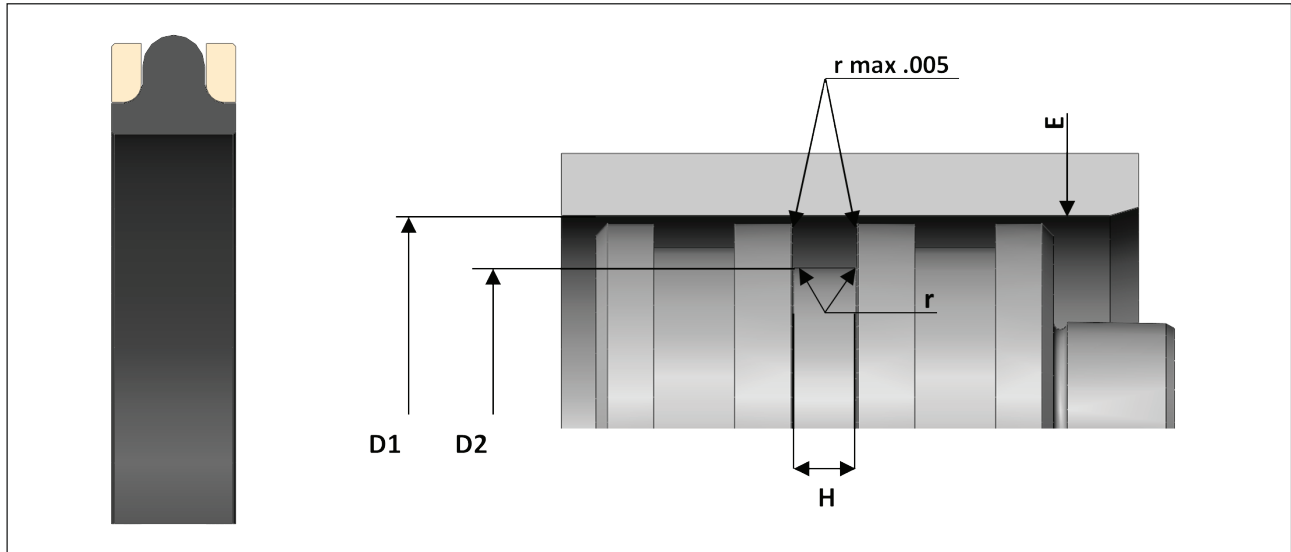
For any questions or concerns please contact us at info@kcseals.ca

Rod T-Seal Part Numbering System



T-Seal

Hardware and Part Number Information for Piston T-Seals



Dimensional table. Rod-Inch

K.C. Seals Part Number	Bore D1 Tol: +/- .002	Groove D2 Tol: +/- .004	Groove Width H	Corner Radii r	Radial Clearance *E _{max.}		
					1.500 psi (10 MPa)	3.000 psi (20 MPa)	5.800 psi (40 MPa)
TPO 006	.251	.140	.093/.101	.005/.015	.004	.003	.002
TPO 007	.282	.171	.093/.101	.005/.015	.004	.003	.002
TPO 008	.313	.202	.093/.101	.005/.015	.004	.003	.002
TPO 009	.345	.234	.093/.101	.005/.015	.004	.003	.002
TPO 010	.376	.265	.093/.101	.005/.015	.004	.003	.002
TPO 011	.438	.327	.093/.101	.005/.015	.004	.003	.002
TPO 012	.501	.390	.093/.101	.005/.015	.004	.003	.002
TPO 110	.564	.386	.140/.148	.005/.015	.006	.004	.003
TPO 111	.627	.449	.140/.148	.005/.015	.006	.004	.003
TPO 112	.689	.511	.140/.148	.005/.015	.006	.004	.003
TPO 113	.752	.574	.140/.148	.005/.015	.006	.004	.003
TPO 114	.814	.636	.140/.148	.005/.015	.006	.004	.003
TPO 115	.877	.699	.140/.148	.005/.015	.006	.004	.003
TPO 116	.939	.761	.140/.148	.005/.015	.006	.004	.003
TPO 210	1.002	.758	.187/.195	.010/.025	.008	.006	.003
TPO 211	1.065	.821	.187/.195	.010/.025	.008	.006	.003
TPO 212	1.127	.883	.187/.195	.010/.025	.008	.006	.003
TPO 213	1.190	.946	.187/.195	.010/.025	.008	.006	.003
TPO 214	1.252	1.008	.187/.195	.010/.025	.008	.006	.003
TPO 215	1.315	1.071	.187/.195	.010/.025	.008	.006	.003

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TPO 216	1.377	1.133	.187/.195	.010/.025	.008	.006	.003
TPO 217	1.440	1.196	.187/.195	.010/.025	.008	.006	.003
TPO 218	1.502	1.258	.187/.195	.010/.025	.008	.006	.003
TPO 219	1.565	1.321	.187/.195	.010/.025	.008	.006	.003
TPO 220	1.627	1.383	.187/.195	.010/.025	.008	.006	.003
TPO 221	1.690	1.446	.187/.195	.010/.025	.008	.006	.003
TPO 222	1.752	1.508	.187/.195	.010/.025	.008	.006	.003
TPO 325	1.877	1.505	.281/.289	.020/.035	.010	.008	.004
TPO 326	2.002	1.630	.281/.289	.020/.035	.010	.008	.004
TPO 327	2.127	1.755	.281/.289	.020/.035	.010	.008	.004
TPO 328	2.252	1.880	.281/.289	.020/.035	.010	.008	.004
TPO 329	2.377	2.005	.281/.289	.020/.035	.010	.008	.004
TPO 330	2.502	2.130	.281/.289	.020/.035	.010	.008	.004
TPO 331	2.627	2.255	.281/.289	.020/.035	.010	.008	.004
TPO 332	2.752	2.380	.281/.289	.020/.035	.010	.008	.004
TPO 333	2.877	2.505	.281/.289	.020/.035	.010	.008	.004
TPO 334	3.002	2.630	.281/.289	.020/.035	.010	.008	.004
TPO 335	3.127	2.755	.281/.289	.020/.035	.010	.008	.004
TPO 336	3.252	2.880	.281/.289	.020/.035	.010	.008	.004
TPO 337	3.377	3.005	.281/.289	.020/.035	.010	.008	.004
TPO 338	3.502	3.130	.281/.289	.020/.035	.010	.008	.004
TPO 339	3.627	3.255	.281/.289	.020/.035	.010	.008	.004
TPO 340	3.752	3.380	.281/.289	.020/.035	.010	.008	.004
TPO 341	3.877	3.505	.281/.289	.020/.035	.010	.008	.004
TPO 342	4.002	3.630	.281/.289	.020/.035	.010	.008	.004
TPO 343	4.127	3.755	.281/.289	.020/.035	.010	.008	.004
TPO 344	4.252	3.880	.281/.289	.020/.035	.010	.008	.004
TPO 345	4.377	4.005	.281/.289	.020/.035	.010	.008	.004
TPO 346	4.502	4.130	.281/.289	.020/.035	.010	.008	.004
TPO 347	4.627	4.255	.281/.289	.020/.035	.010	.008	.004
TPO 348	4.752	4.380	.281/.289	.020/.035	.010	.008	.004
TPO 349	4.877	4.505	.281/.289	.020/.035	.010	.008	.004
TPO 425	5.003	4.526	.375/.383	.020/.035	.012	.010	.006
TPO 426	5.128	4.651	.375/.383	.020/.035	.012	.010	.006
TPO 427	5.253	4.776	.375/.383	.020/.035	.012	.010	.006
TPO 428	5.378	4.901	.375/.383	.020/.035	.012	.010	.006
TPO 429	5.503	5.026	.375/.383	.020/.035	.012	.010	.006
TPO 430	5.628	5.151	.375/.383	.020/.035	.012	.010	.006
TPO 431	5.753	5.276	.375/.383	.020/.035	.012	.010	.006
TPO 432	5.878	5.401	.375/.383	.020/.035	.012	.010	.006
TPO 433	6.003	5.526	.375/.383	.020/.035	.012	.010	.006
TPO 434	6.128	5.651	.375/.383	.020/.035	.012	.010	.006
TPO 435	6.253	5.776	.375/.383	.020/.035	.012	.010	.006
TPO 436	6.378	5.901	.375/.383	.020/.035	.012	.010	.006
TPO 437	6.503	6.026	.375/.383	.020/.035	.012	.010	.006

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TPO 438	6.753	6.276	.375/.383	.020/.035	.012	.010	.006
TPO 439	7.003	6.526	.375/.383	.020/.035	.012	.010	.006
TPO 440	7.253	6.776	.375/.383	.020/.035	.012	.010	.006
TPO 441	7.503	7.026	.375/.383	.020/.035	.012	.010	.006
TPO 442	7.753	7.276	.375/.383	.020/.035	.012	.010	.006
TPO 443	8.003	7.526	.375/.383	.020/.035	.012	.010	.006
TPO 444	8.253	7.776	.375/.383	.020/.035	.012	.010	.006
TPO 445	8.503	8.026	.375/.383	.020/.035	.012	.010	.006
TPO 446	9.003	8.526	.375/.383	.020/.035	.012	.010	.006
TPO 447	.004	9.026	.375/.383	.020/.035	.012	.010	.006
TPO 448	10.004	9.526	.375/.383	.020/.035	.012	.010	.006
TPO 449	10.504	10.026	.375/.383	.020/.035	.012	.010	.006
TPO 450	11.004	10.526	.375/.383	.020/.035	.012	.010	.006
TPO 451	11.504	11.026	.375/.383	.020/.035	.012	.010	.006
TPO 452	12.004	11.526	.375/.383	.020/.035	.012	.010	.006
TPO 453	12.504	12.026	.375/.383	.020/.035	.012	.010	.006
TPO 454	13.004	12.526	.375/.383	.020/.035	.012	.010	.006
TPO 455	13.504	13.026	.375/.383	.020/.035	.012	.010	.006
TPO 456	14.004	13.526	.375/.383	.020/.035	.012	.010	.006
TPO 457	14.504	14.026	.375/.383	.020/.035	.012	.010	.006
TPO 458	15.004	14.526	.375/.383	.020/.035	.012	.010	.006
TPO 459	15.504	15.026	.375/.383	.020/.035	.012	.010	.006
TPO 460	16.004	15.526	.375/.383	.020/.035	.012	.010	.006

Custom Dimensions

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Piston T-Seal Part Numbering System

