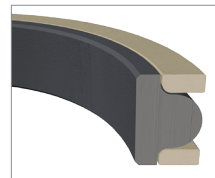
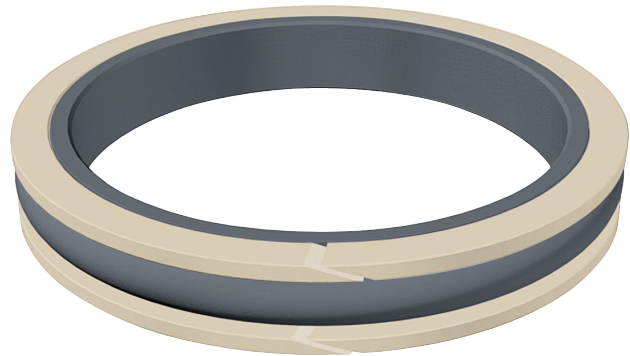
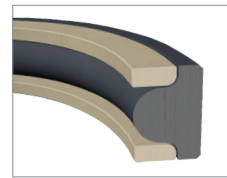


Seal Materials	Temp. Range	
Nitrile	-40°C	to 120°C
Viton™/Fluorocarbon	-26°C	to 204°C
Hydrogenated Nitrile	-40°C	to 160°C
EPDM	-54°C	to 150°C
Perfluoroelastomer	-15°C	to 310°C
Aflas® FEPM	-9°C	to 232°C
Back-up Ring Materials		
Nylon	-54°C	to 121°C
PTFE	-268°C	to 232°C
PEEK	-70°C	to 260°C



Piston (TPO)



Rod (TRO)

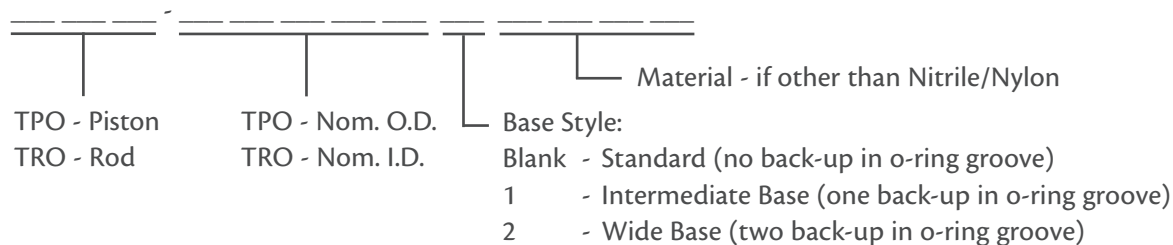
Product Description

T-seals have a double acting seal design that are available in both piston and rod profiles. A standard O-ring groove can accommodate either a piston and rod profile. Their design aid in preventing extrusion up to 5000 psi. They are also a more reliable options, as they help eliminate the rolling or spiraling associated with O-rings.

Our standard T-seals are composed of a nitrile sealing element and two split nylon back-up rings. A popular combination for added chemical resistance is our Viton™ and PEEK T-seal.

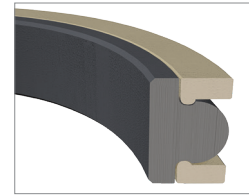
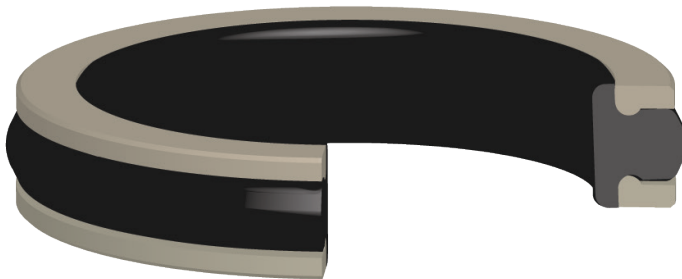
Contact us for assistance when replacing an O-ring and back-up combination with a T-Seal.

Part Numbers:

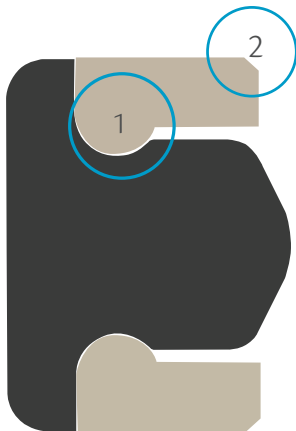


Example: TPO 0875VPPEEK - Viton™ Piston T-seal, PEEK Back-Up Rings, 7/8” Nom. O.D., 1/8” Nom. C/S

Locking Style



Improve Ease of Installation



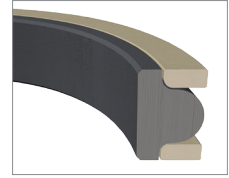
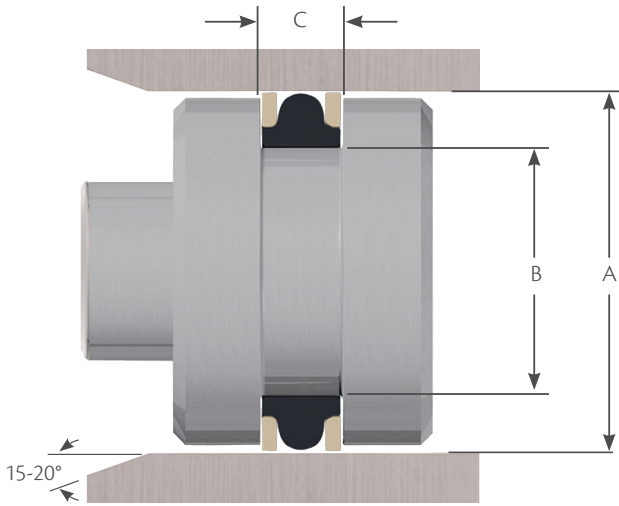
1 . Piston T-seals are available in locking profile which assists with the installation process. With the inter-locking design, customers benefit from:

- A reduced chance of installing the back-up rings incorrectly.
- The back-up rings lock into the T-seal element when assembled in the seal gland.

2. Chamfered back-up ring reduces the possibility that the back-up ring can be sheared off in a port or retaining ring groove during assembly.

The locking T-seal style is available for piston T-seals and capped piston T-seals. If installation issues occur when using T-seals, contact Hi-Tech Seals and inquire about locking T-seals.

Piston Style



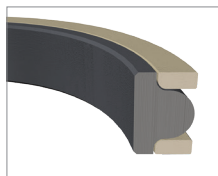
Piston Clearance Limits

Bore Size Range	Max. Dia. Clearance
0.250" to 0.500"	0.004"
0.501" to 1.750"	0.005"
1.751" to 4.875"	0.007"
4.876" to 9.000"	0.009"
9.001" - up	0.010"

Part Numbers	Nominal Reference			A Bore Dia.	B Groove Dia.	C Groove Width
	I.D.	O.D.	C/S			
	Tolerance			+0.001	+0.002	+0.010
				-0.001	-0.000	-0.000
TPO 0375	3/16	3/8	3/32	0.375	0.190	0.150
TPO 0437	1/4	7/16	3/32	0.437	0.252	0.150
TPO 0500	5/16	1/2	3/32	0.500	0.315	0.150
TPO 0562	5/16	9/16	1/8	0.562	0.317	0.185
TPO 0625	3/8	5/8	1/8	0.625	0.380	0.185
TPO 0687	7/16	11/16	1/8	0.687	0.442	0.185
TPO 0750	1/2	3/4	1/8	0.750	0.505	0.185
TPO 0812	9/16	13/16	1/8	0.812	0.567	0.185
TPO 0875	5/8	7/8	1/8	0.875	0.630	0.185
TPO 0937	11/16	15/16	1/8	0.937	0.692	0.185
TPO 1000	3/4	1	1/8	1.001	0.756	0.185
TPO 1062	13/16	1 - 1/16	1/8	1.063	0.818	0.185
TPO 1125	7/8	1 - 1/8	1/8	1.126	0.881	0.185
TPO 1187	15/16	1 - 3/16	1/8	1.188	0.943	0.185
TPO 1250	1	1 - 1/4	1/8	1.251	1.006	0.185
TPO 1312	1 - 1/16	1 - 5/16	1/8	1.313	1.068	0.185
TPO 1375	1 - 1/8	1 - 3/8	1/8	1.376	1.131	0.185
TPO 1437	1 - 3/16	1 - 7/16	1/8	1.438	1.193	0.185
TPO 1500	1 - 1/4	1 - 1/2	1/8	1.501	1.256	0.185
TPO 15001	1 - 1/4	1 - 1/2	1/8	1.501	1.256	0.235
TPO 15002	1 - 1/4	1 - 1/2	1/8	1.501	1.256	0.304
TPO 1562	1 - 5/16	1 - 9/16	1/8	1.563	1.318	0.185
TPO 1625	1 - 3/8	1 - 5/8	1/8	1.626	1.381	0.185
TPO 1687	1 - 7/16	1 - 11/16	1/8	1.688	1.442	0.185
TPO 1750	1 - 1/2	1 - 3/4	1/8	1.751	1.506	0.185
TPO 17501	1 - 1/2	1 - 3/4	1/8	1.751	1.506	0.235
TPO 17502	1 - 1/2	1 - 3/4	1/8	1.751	1.506	0.304
TPO 1875	1 - 1/2	1 - 7/8	3/16	1.876	1.502	0.280
TPO 2000	1 - 5/8	2	3/16	2.001	1.627	0.280

Part Numbers	Nominal Reference			A Bore Dia.	B Groove Dia.	C Groove Width
	I.D.	O.D.	C/S			
	Tolerance			+0.001	+0.002	+0.010
				-0.001	-0.000	-0.000
TPO 20001	1 - 5/8	2	3/16	2.001	1.627	0.334
TPO 20002	1 - 5/8	2	3/16	2.001	1.627	0.424
TPO 2125	1 - 3/4	2 - 1/8	3/16	2.126	1.752	0.280
TPO 2250	1 - 7/8	2 - 1/4	3/16	2.251	1.877	0.280
TPO 22501	1 - 7/8	2 - 1/4	3/16	2.251	1.877	0.334
TPO 22502	1 - 7/8	2 - 1/4	3/16	2.251	1.877	0.424
TPO 2375	2	2 - 3/8	3/16	2.376	2.002	0.280
TPO 23752	2	2 - 3/8	3/16	2.376	2.002	0.424
TPO 2500	2 - 1/8	2 - 1/2	3/16	2.501	2.127	0.280
TPO 25001	2 - 1/8	2 - 1/2	3/16	2.501	2.127	0.334
TPO 25002	2 - 1/8	2 - 1/2	3/16	2.501	2.127	0.424
TPO 2625	2 - 1/4	2 - 5/8	3/16	2.626	2.252	0.280
	Tolerance			+0.002	+0.003	+0.010
				-0.002	-0.001	-0.000
TPO 2750	2 - 3/8	2 - 3/4	3/16	2.751	2.377	0.280
TPO 27502	2 - 3/8	2 - 3/4	3/16	2.751	2.377	0.424
TPO 2875	2 - 1/2	2 - 7/8	3/16	2.876	2.502	0.280
TPO 28752	2 - 1/2	2 - 7/8	3/16	2.876	2.502	0.424
TPO 3000	2 - 5/8	3	3/16	3.001	2.627	0.280
TPO 30001	2 - 5/8	3	3/16	3.001	2.627	0.334
TPO 30002	2 - 5/8	3	3/16	3.001	2.627	0.424
TPO 3125	2 - 3/4	3 - 1/8	3/16	3.126	2.752	0.280
TPO 3250	2 - 7/8	3 - 1/4	3/16	3.251	2.877	0.280
TPO 3375	3	3 - 3/8	3/16	3.377	3.003	0.280
TPO 3500	3 - 1/8	3 - 1/2	3/16	3.502	3.128	0.280
TPO 35001	3 - 1/8	3 - 1/2	3/16	3.502	3.128	0.334
TPO 35002	3 - 1/8	3 - 1/2	3/16	3.502	3.128	0.424
TPO 3625	3 - 1/4	3 - 5/8	3/16	3.627	3.253	0.280
TPO 3750	3 - 3/8	3 - 3/4	3/16	3.752	3.378	0.280

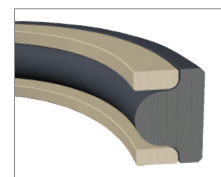
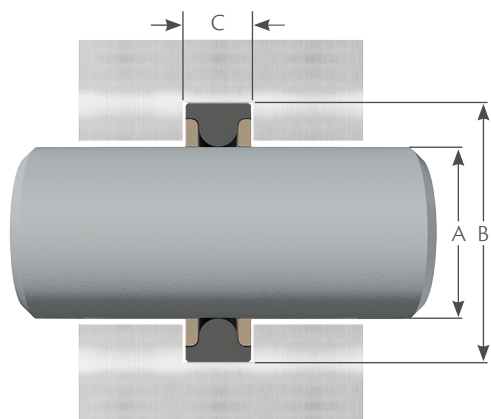
Piston Style



Part Numbers	Nominal Reference			A Bore Dia.	B Groove Dia.	C Groove Width
	I.D.	O.D.	C/S			
Tolerance				+0.002 -0.002	+0.003 -0.001	+0.010 -0.000
TPO 3875	3 - 1/2	3 - 7/8	3/16	3.877	3.503	0.280
TPO 4000	3 - 5/8	4	3/16	4.002	3.628	0.280
TPO 40001	3 - 5/8	4	3/16	4.002	3.628	0.334
TPO 40002	3 - 5/8	4	3/16	4.002	3.628	0.424
TPO 4125	3 - 3/4	4 - 1/8	3/16	4.127	3.753	0.280
TPO 4250	3 - 7/8	4 - 1/4	3/16	4.252	3.878	0.280
TPO 4375	4	4 - 3/8	3/16	4.377	4.003	0.280
TPO 4500	4 - 1/8	4 - 1/2	3/16	4.502	4.128	0.280
TPO 45001	4 - 1/8	4 - 1/2	3/16	4.502	4.128	0.334
TPO 45002	4 - 1/8	4 - 1/2	3/16	4.502	4.128	0.424
TPO 4625	4 - 1/4	4 - 5/8	3/16	4.627	4.253	0.280
TPO 46251	4 - 1/4	4 - 5/8	3/16	4.627	4.253	0.334
TPO 4750	4 - 3/8	4 - 3/4	3/16	4.752	4.378	0.280
TPO 47502	4 - 3/8	4 - 3/4	3/16	4.752	4.378	0.424
TPO 4875	4 - 1/2	4 - 7/8	3/16	4.877	4.503	0.280
TPO 5000	4 - 5/8	5	3/16	5.003	4.629	0.280
TPO 50001	4 - 5/8	5	3/16	5.003	4.629	0.334
TPO 50002	4 - 1/2	5	1/4	5.000	4.524	0.475
TPO 50003	4 - 1/2	5	1/4	5.000	4.524	0.579
TPO 5125	4 - 5/8	5 - 1/8	1/4	5.128	4.649	0.366
TPO 5250	4 - 3/4	5 - 1/4	1/4	5.253	4.774	0.366
TPO 52502	4 - 3/4	5 - 1/4	1/4	5.253	4.774	0.579
TPO 5375	4 - 7/8	5 - 3/8	1/4	5.378	4.899	0.366
TPO 5500	5	5 - 1/2	1/4	5.503	5.024	0.366
TPO 55001	5	5 - 1/2	1/4	5.503	5.024	0.475
TPO 55002	5	5 - 1/2	1/4	5.503	5.024	0.579
TPO 5625	5 - 1/8	5 - 5/8	1/4	5.628	5.149	0.366
TPO 5750	5 - 1/4	5 - 3/4	1/4	5.753	5.274	0.366
TPO 5875	5 - 3/8	5 - 7/8	1/4	5.878	5.399	0.366
TPO 6000	5 - 1/2	6	1/4	6.003	5.524	0.366
TPO 60001	5 - 1/2	6	1/4	6.003	5.524	0.475
TPO 60002	5 - 1/2	6	1/4	6.003	5.524	0.579
TPO 6125	5 - 3/8	6 - 1/8	1/4	6.128	5.649	0.366
TPO 6250	5 - 3/4	6 - 1/4	1/4	6.253	5.774	0.366
TPO 62501	5 - 3/4	6 - 1/4	1/4	6.253	5.774	0.475
TPO 62502	5 - 3/4	6 - 1/4	1/4	6.253	5.774	0.579

Part Numbers	Nominal Reference			A Bore Dia.	B Groove Dia.	C Groove Width
	I.D.	O.D.	C/S			
Tolerance				+0.003 -0.003	+0.004 -0.002	+0.010 -0.000
TPO 6375	5 - 7/8	6 - 3/8	1/4	6.378	5.899	0.366
TPO 6500	6	6 - 1/2	1/4	6.503	6.024	0.366
TPO 65001	6	6 - 1/2	1/4	6.503	6.024	0.475
TPO 65002	6	6 - 1/2	1/4	6.503	6.024	0.579
TPO 6750	6 - 1/4	6 - 3/4	1/4	6.753	6.274	0.366
TPO 7000	6 - 1/2	7	1/4	7.003	6.524	0.366
TPO 70001	6 - 1/2	7	1/4	7.003	6.524	0.475
TPO 70002	6 - 1/2	7	1/4	7.003	6.524	0.579
TPO 7250	6 - 3/4	7 - 1/4	1/4	7.253	6.774	0.366
TPO 7500	7	7 - 1/2	1/4	7.503	7.024	0.366
TPO 75002	7	7 - 1/2	1/4	7.503	7.024	0.579
TPO 7750	7 - 1/4	7 - 3/4	1/4	7.753	7.274	0.366
TPO 8000	7 - 1/2	8	1/4	8.003	7.524	0.366
TPO 80002	7 - 1/2	8	1/4	8.003	7.524	0.579
TPO 8250	7 - 3/4	8 - 1/4	1/4	8.253	7.774	0.366
TPO 82501	7 - 3/4	8 - 1/4	1/4	8.253	7.774	0.475
TPO 8500	8	8 - 1/2	1/4	8.503	8.024	0.366
TPO 9000	8 - 1/2	9	1/4	9.003	8.524	0.366
TPO 90001	8 - 1/2	9	1/4	9.003	8.524	0.475
TPO 90002	8 - 1/2	9	1/4	9.003	8.524	0.579
TPO 9500	9	9 - 1/2	1/4	9.503	9.024	0.366
TPO 10000	9 - 1/2	10	1/4	10.003	9.524	0.366
TPO 100001	9 - 1/2	10	1/4	10.003	9.524	0.475
TPO 10500	10	10 - 1/2	1/4	10.503	10.024	0.366
TPO 11000	10 - 1/2	11	1/4	11.003	10.524	0.366
TPO 11500	11	11 - 1/2	1/4	11.503	11.024	0.366
TPO 12000	11 - 1/2	12	1/4	12.003	11.524	0.366
TPO 120001	11 - 1/2	12	1/4	12.003	11.524	0.475
TPO 12500	12	12 - 1/2	1/4	12.503	12.024	0.366
TPO 13000	12 - 1/2	13	1/4	13.003	12.524	0.366
TPO 130001	12 - 1/2	13	1/4	13.003	12.524	0.475
TPO 13500	13	13 - 1/2	1/4	13.503	13.024	0.366
TPO 14000	13 - 1/2	14	1/4	14.003	13.524	0.366
TPO 140001	13 - 1/2	14	1/4	14.003	13.524	0.475
TPO 15500	15	15 - 1/2	1/4	15.503	15.024	0.366

Rod Style



Throat Clearance Limits

Shaft Size Range	Max. Dia. Clearance
0.123" to 0.375"	0.004"
0.376" to 1.500"	0.005"
1.501" to 4.500"	0.007"
4.501" to 8.500"	0.009"
8.501" - up	0.010"

Part Numbers	Nominal Reference			A	B	C
	I.D.	O.D.	C/S	Shaft Dia.	Groove Dia.	Groove Width
Tolerance				+0.001	+0.002	+0.010
				-0.001	-0.002	-0.000
TRO 0187	3/16	3/8	3/32	0.186	0.370	0.150
TRO 0250	1/4	7/16	3/32	0.248	0.433	0.150
TRO 0312	5/16	1/2	3/32	0.310	0.495	0.150
TRO 0375	3/8	5/8	1/8	0.373	0.618	0.185
TRO 0437	7/16	11/16	1/8	0.435	0.680	0.185
TRO 0500	1/2	3/4	1/8	0.498	0.743	0.185
TRO 0562	9/16	13/16	1/8	0.560	0.805	0.185
TRO 0625	5/8	7/8	1/8	0.623	0.868	0.185
TRO 0687	11/16	15/16	1/8	0.685	0.930	0.185
TRO 0750	3/4	1	1/8	0.747	0.992	0.185
TRO 0812	13/16	1 - 1/16	1/8	0.809	1.054	0.185
TRO 0875	7/8	1 - 1/8	1/8	0.872	1.117	0.185
TRO 0937	15/16	1 - 3/16	1/8	0.934	1.179	0.185
TRO 1000	1	1 - 1/4	1/8	0.997	1.242	0.185
TRO 1062	1 - 1/16	1 - 5/16	1/8	1.059	1.304	0.185
TRO 1125	1 - 1/8	1 - 3/8	1/8	1.122	1.367	0.185
TRO 1187	1 - 3/16	1 - 7/16	1/8	1.184	1.429	0.185
TRO 1250	1 - 1/4	1 - 1/2	1/8	1.247	1.492	0.185
TRO 1312	1 - 5/16	1 - 9/16	1/8	1.309	1.554	0.185
TRO 1375	1 - 3/8	1 - 5/8	1/8	1.372	1.617	0.185
TRO 1437	1 - 7/16	1 - 11/16	1/8	1.434	1.679	0.185
TRO 1500	1 - 1/2	1 - 3/4	1/8	1.497	1.742	0.185
TRO 15001	1 - 1/2	1 - 3/4	1/8	1.497	1.742	0.235
TRO 1625	1 - 5/8	2	3/16	1.622	1.996	0.280
TRO 1750	1 - 3/4	2 - 1/8	3/16	1.747	2.121	0.280
TRO 1875	1 - 7/8	2 - 1/4	3/16	1.872	2.246	0.280
TRO 2000	2	2 - 3/8	3/16	1.997	2.371	0.280
TRO 2125	2 - 1/8	2 - 1/2	3/16	2.122	2.496	0.280
TRO 2250	2 - 1/4	2 - 5/8	3/16	2.247	2.613	0.280
Tolerance				+0.002	+0.001	+0.010
				-0.002	-0.003	-0.000
TRO 2375	2 - 3/8	2 - 3/4	3/16	2.372	2.746	0.280
TRO 2500	2 - 1/2	2 - 7/8	3/16	2.497	2.871	0.280
TRO 2625	2 - 5/8	3	3/16	2.622	2.996	0.280
TRO 2750	2 - 3/4	3 - 1/8	3/16	2.747	3.121	0.280
TRO 2875	2 - 7/8	3 - 1/4	3/16	2.872	3.246	0.280

Part Numbers	Nominal Reference			A	B	C
	I.D.	O.D.	C/S	Shaft Dia.	Groove Dia.	Groove Width
Tolerance				+0.002	+0.001	+0.010
				-0.002	-0.003	-0.000
TRO 3000	3	3 - 3/8	3/16	2.996	3.370	0.280
TRO 3125	3 - 1/8	3 - 1/2	3/16	3.121	3.495	0.280
TRO 3250	3 - 1/4	3 - 5/8	3/16	3.246	3.620	0.280
TRO 3375	3 - 3/8	3 - 3/4	3/16	3.371	3.745	0.280
TRO 3500	3 - 1/2	3 - 7/8	3/16	3.496	3.870	0.280
TRO 3625	3 - 5/8	4	3/16	3.621	3.995	0.280
TRO 3750	3 - 3/4	4 - 1/8	3/16	3.746	4.120	0.280
TRO 3875	3 - 7/8	4 - 1/4	3/16	3.871	4.245	0.280
TRO 4000	4	4 - 3/8	3/16	3.996	4.370	0.280
TRO 4125	4 - 1/8	4 - 1/2	3/16	4.121	4.495	0.280
TRO 4250	4 - 1/4	4 - 5/8	3/16	4.246	4.620	0.280
TRO 4375	4 - 3/8	4 - 3/4	3/16	4.371	4.745	0.280
TRO 4500	4 - 1/2	4 - 7/8	3/16	4.496	4.870	0.280
TRO 5000	5	5 - 1/2	1/4	4.996	5.475	0.366
TRO 5250	5 - 1/4	5 - 3/4	1/4	5.246	5.725	0.366
TRO 5500	5 - 1/2	6	1/4	5.496	5.975	0.366
TRO 5625	5 - 5/8	6 - 1/8	1/4	5.621	6.100	0.366
Tolerance				+0.003	+0.002	+0.010
				-0.003	-0.004	-0.000
TRO 5875	5 - 7/8	6 - 3/8	1/4	5.871	6.350	0.366
TRO 6000	6	6 - 1/2	1/4	5.996	6.475	0.366
TRO 6250	6 - 1/4	6 - 3/4	1/4	6.246	6.725	0.366
TRO 6500	6 - 1/2	7	1/4	6.496	6.975	0.366
TRO 6750	6 - 3/4	7 - 1/4	1/4	6.746	7.225	0.366
TRO 7000	7	7 - 1/2	1/4	6.996	7.475	0.366
TRO 7250	7 - 1/4	7 - 3/4	1/4	7.246	7.725	0.366
TRO 7500	7 - 1/2	8	1/4	7.500	7.984	0.366
TRO 7750	7 - 3/4	8 - 1/4	1/4	7.746	8.225	0.366
TRO 8000	8	8 - 1/2	1/4	7.996	8.475	0.366
TRO 8500	8 - 1/2	9	1/4	8.500	8.984	0.366
TRO 9000	9	9 - 1/2	1/4	8.996	9.475	0.366
TRO 9500	9 - 1/2	10	1/4	9.496	9.975	0.366
TRO 10000	10	10 - 1/2	1/4	9.996	10.475	0.366
TRO 10500	10 - 1/2	11	1/4	10.496	10.975	0.366
TRO 11000	11	11 - 1/2	1/4	10.996	11.475	0.366
TRO 11500	11 - 1/2	12	1/4	11.496	11.975	0.366

T-Seals