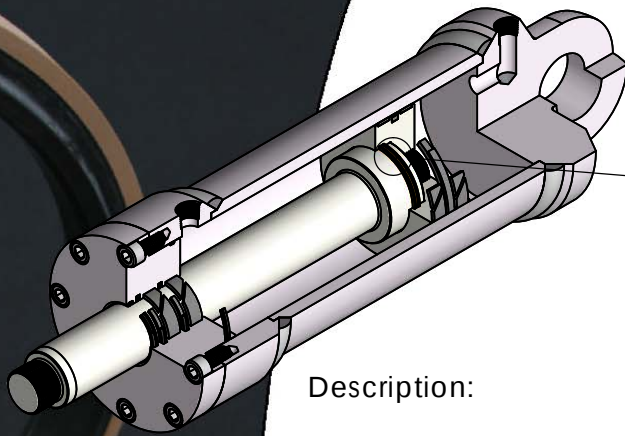
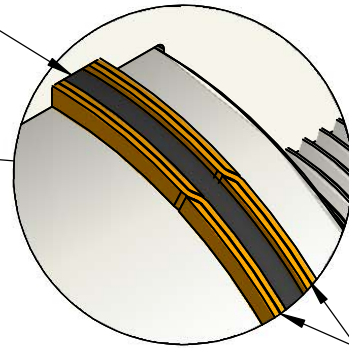




Elastomer
O-ring



T-LON® "TL171"
Back-up Rings

Description:

The TL171 PTFE spiral back-up rings are proven components used for sealing both low and high pressure systems. Any system pushing the pressure limits on an elastomer seal, TL171 back-up rings are an inexpensive option to increase seal pressure capabilities or increase radial extrusion gaps behind the seal.

The TL171 back-up rings come standard in T-LON® 01 (Virgin PTFE) and are considered the premium back-up ring compared to the split and solid back-up rings. They have the assembly ease of the split rings and the reliability of the solid rings (no extrusion gap that causes o-ring extrusion or nibbling).

Consider TL171 back-up rings with elastomer o-rings under the following conditions:

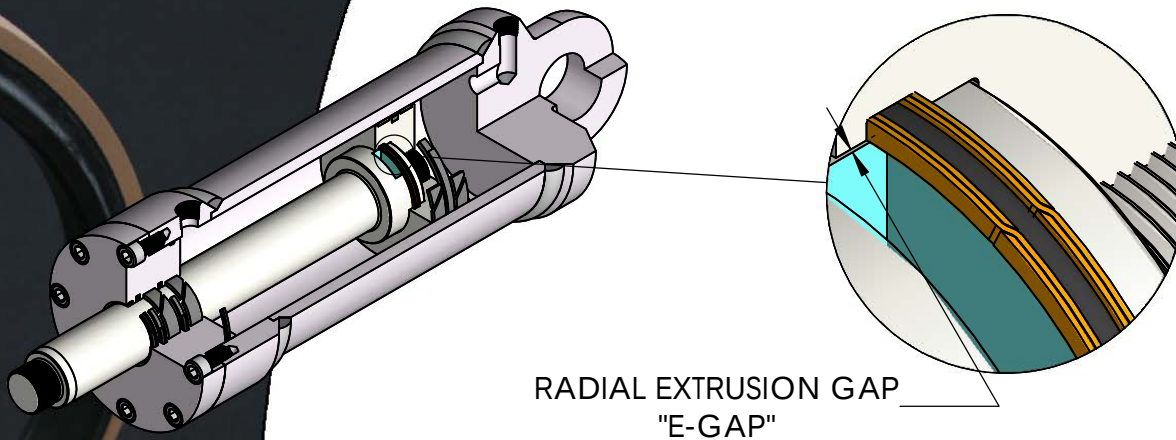
- Pressure above 1000psi (7MPa)
- Radial Extrusion gap > .005" (.13mm)
- High Reciprocating Stroke Frequency
- High Temperatures
- Medium with Contamination
- Pressure Shock Loads (Fast Pressure Changes)

Advantages:

- Inexpensive option
- Easy to install with the reliability of a solid back-up ring
- Increase pressure rating of standard o-rings
- Available for cylinders up to 45" diameter

Applications:

- Mobile Hydraulic Cylinders
- Pneumatic Piston Cylinders
- Agriculture Equipment
- Hydraulic Valves and Pumps
- Filling Machines
- Testing Machinery
- Any sealing application



RADIAL EXTRUSION GAP
"E-GAP"

Technical Data for PTFE compounds:

- (1) Temperature Range: -400° to 500°F
- (2) T-LON® seal compound determines allowable pressure
 - Pressure: Up to 5800 psi (Function of e-gap and T-LON® compound)
 - Surface Speed: Up to 6 ft/s

Most Common:

Virgin PTFE ("01")

- Most cost effective
- Flexible for assembly ease

MAXIMUM E-GAP (inch) (Virgin PTFE)***			
SERIES	1,450 PSI	2,900 PSI	5,800
-000	0.008	0.004	0.0015
-100	0.008	0.004	0.0015
-200	0.008	0.004	0.0015
-300	0.010	0.005	0.0025
-400	0.015	0.008	0.0035

***USE PISTON WEAR RINGS SO E-GAP DOES NOT EXCEED TABLED VALUES

MAXIMUM E-GAP (inch) (Shore 70A O-rings)			
REFERENCE ONLY***			
O-Ring CS (in)	500 PSI	1,000 PSI	1,500 PSI
0.070	0.003	0.002	0.001
0.103	0.004	0.003	0.002
0.139	0.004	0.003	0.002
0.210	0.005	0.004	0.003
0.275	0.006	0.004	0.003

***IF THE APPLICATION DEMANDS HIGHER PRESSURES/E-GAPS, TL171 BACK-UP RINGS ARE RECOMMENDED.

ORDERING INFORMATION

TL171 - -

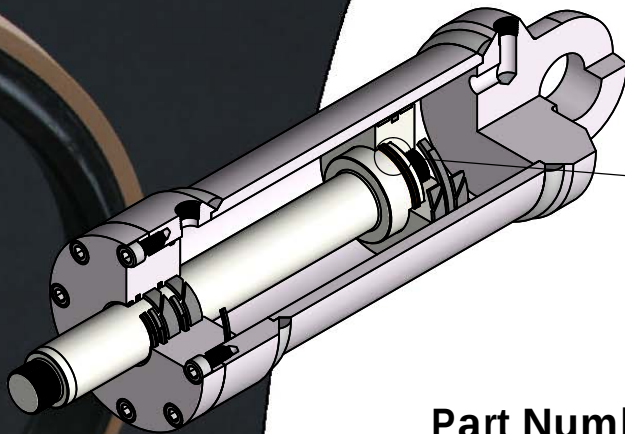
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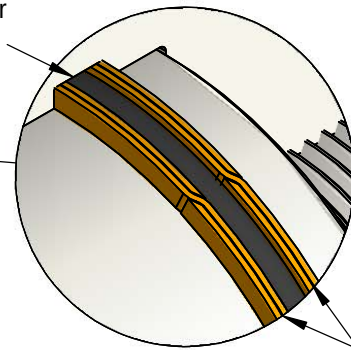
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"115" = 100 SERIES, -115 SIZE
"332" = 300 SERIES, -332 SIZE

"01" = VIRGIN PTFE



Elastomer
O-ring



T-LON® "TL171"
Back-up Rings

Part Number Cross Reference List

TL171 Dash Size	Cross-Reference P/N (Similar to)
MS28782	
006	MS28782-1
007	MS28782-2
008	MS28782-3
009	MS28782-4
010	MS28782-5
011	MS28782-6
012	MS28782-7
110	MS28782-8
111	MS28782-9
112	MS28782-10
113	MS28782-11
114	MS28782-12
115	MS28782-13
116	MS28782-14
210	MS28782-15
211	MS28782-16
212	MS28782-17
213	MS28782-18
214	MS28782-19
215	MS28782-20
216	MS28782-21
217	MS28782-22
218	MS28782-23
219	MS28782-24
220	MS28782-25
221	MS28782-26
222	MS28782-27
325	MS28782-28
326	MS28782-29
327	MS28782-30
328	MS28782-31
329	MS28782-32
330	MS28782-33
331	MS28782-34

TL171 Dash Size	Cross-Reference P/N (Similar to)
332	MS28782-35
333	MS28782-36
334	MS28782-37
335	MS28782-38
336	MS28782-39
337	MS28782-40
338	MS28782-41
339	MS28782-42
340	MS28782-43
341	MS28782-44
342	MS28782-45
343	MS28782-46
344	MS28782-47
345	MS28782-48
346	MS28782-49
347	MS28782-50
348	MS28782-51
349	MS28782-52
426	MS28782-53
427	MS28782-54
428	MS28782-55
429	MS28782-56
430	MS28782-57
431	MS28782-58
432	MS28782-59
433	MS28782-60
434	MS28782-61
435	MS28782-62
436	MS28782-63
437	MS28782-64
438	MS28782-65
439	MS28782-66
440	MS28782-67
441	MS28782-68
442	MS28782-69
443	MS28782-70

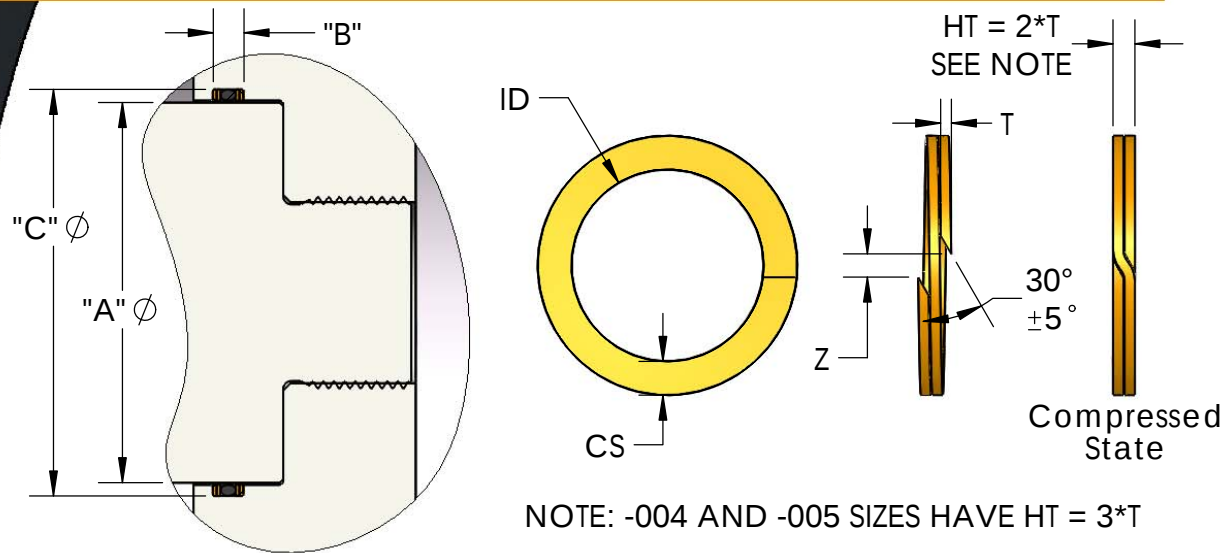
TL171 Dash Size	Cross-Reference P/N (Similar to)
444	MS28782-71
445	MS28782-72
446	MS28782-73
447	MS28782-74
448	MS28782-75
449	MS28782-76
450	MS28782-77
451	MS28782-78
452	MS28782-79
453	MS28782-80
454	MS28782-81
455	MS28782-82
456	MS28782-83
457	MS28782-84
458	MS28782-85
459	MS28782-86
460	MS28782-87
425	MS28782-88

MS28783

223	MS28783-1
224	MS28783-2
225	MS28783-3
226	MS28783-4
227	MS28783-5
228	MS28783-6
229	MS28783-7
230	MS28783-8
231	MS28783-9
232	MS28783-10
233	MS28783-11
234	MS28783-12
235	MS28783-13
236	MS28783-14
237	MS28783-15
238	MS28783-16

TL171 Dash Size	Cross-Reference P/N (Similar to)
239	MS28783-17
240	MS28783-18
241	MS28783-19
242	MS28783-20
243	MS28783-21
244	MS28783-22
245	MS28783-23
246	MS28783-24
247	MS28783-25
248	MS28783-26
249	MS28783-27
250	MS28783-28
251	MS28783-29
252	MS28783-30
253	MS28783-31
254	MS28783-32
255	MS28783-33
256	MS28783-34
257	MS28783-35
258	MS28783-36
259	MS28783-37
260	MS28783-38
261	MS28783-39
262	MS28783-40
263	MS28783-41
264	MS28783-42
265	MS28783-43
266	MS28783-44
267	MS28783-45
268	MS28783-46
269	MS28783-47
270	MS28783-48
271	MS28783-49
272	MS28783-50
273	MS28783-51
274	MS28783-52

T-LON® "TL171" Series Spiral Back-up Ring



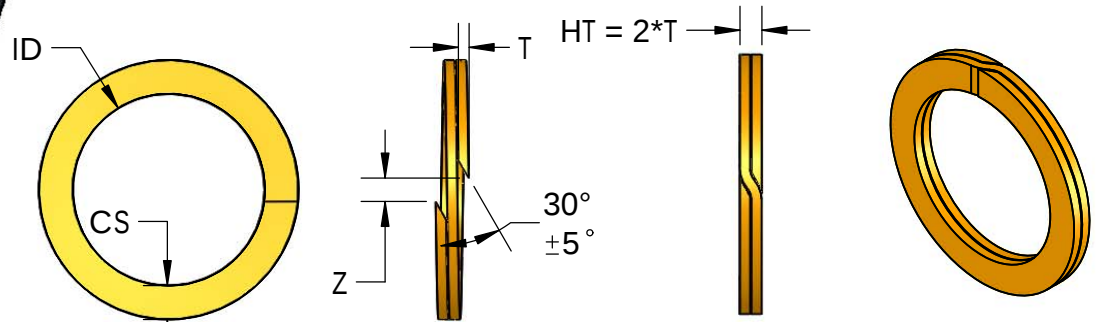
Reference Groove Dimensions for O-rings with "TL171" back-up rings

AS568 O-ring Dash #	Gland Width "B" No Backup Ring		Gland Width "B" One Backup Ring		Gland Width "B" Two Backup Rings	
	Min	Max	Min	Max	Min	Max
-004 to -009	0.098	0.103	0.154	0.164	0.210	0.220
-010 to -028	0.094	0.099	0.150	0.160	0.207	0.217
-110 to -149	0.141	0.151	0.183	0.193	0.245	0.255
-210 to -247	0.188	0.198	0.235	0.245	0.304	0.314
-325 to -349	0.281	0.291	0.334	0.344	0.424	0.434
-424 to -460	0.375	0.385	0.475	0.485	0.579	0.589

T-LON® "TL171" Series Spiral Back-up Ring Sizes (More Available Upon Request)

TL171 Dash Size	OD Ref.	ID	CS ±.001	T	Z	HT REF	TL171 Dash Size	OD Ref.	ID	CS ±.001	T	Z	HT REF
004	0.184	0.078	0.053	.016	.032 .062	0.051	022	1.114	1.000	0.055	.025 .029	.047 .093	0.054
005	0.216	0.110	0.053	.019		0.051	023	1.176	1.062	0.055			0.054
006	0.235	0.125	0.055	0.054		024	1.239	1.250	0.055	0.054			
007	0.266	0.156	0.055	0.054		025	1.301	1.187	0.055	0.054			
008	0.298	0.188	0.055	0.054		026	1.364	1.250	0.055	0.054			
009	0.329	0.219	0.055	0.054		027	1.426	1.312	0.055	0.054			
010	0.360	0.250	0.055	0.054		028	1.489	1.375	0.055	0.054			
011	0.422	0.312	0.055	0.054		110	0.548	0.375	0.088	0.054			
012	0.485	0.375	0.055	.025 .029	.032 .078	0.054	111	0.611	0.438	0.088		.032 .078	0.054
013	0.547	0.437	0.055			0.054	112	0.673	0.500	0.088			0.054
014	0.610	0.500	0.055			0.054	113	0.736	0.562	0.088			0.054
015	0.672	0.562	0.055			0.054	114	0.798	0.625	0.088			0.054
016	0.735	0.625	0.055			0.054	115	0.861	0.687	0.088			0.054
017	0.797	0.687	0.055			0.054	116	0.923	0.750	0.088			0.054
018	0.860	0.750	0.055			0.054	117	0.989	0.812	0.088			0.054
019	0.922	0.812	0.055			.047 .093	0.054	118	1.051	0.875			0.088
020	0.985	0.875	0.055	0.054	119		1.114	0.937	0.088	0.054			
021	1.047	0.937	0.055	0.054	120		1.176	1.000	0.088	0.054			

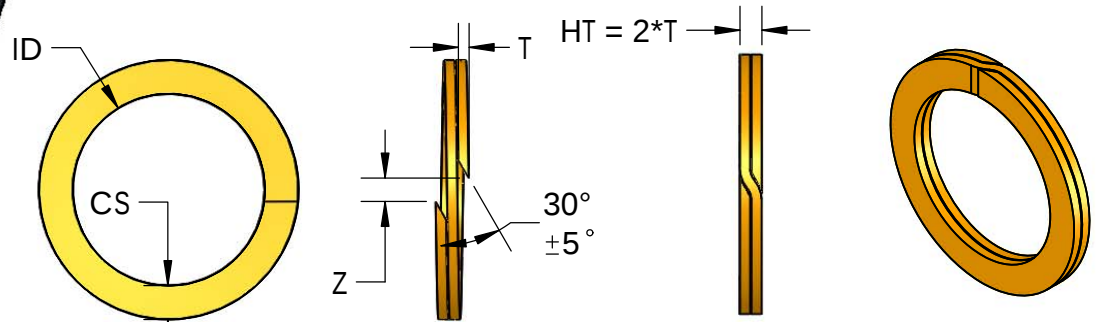
T-LON® "TL171" Series Spiral Back-up Ring



T-LON® "TL171" Series Spiral Back-up Ring Sizes (More Available Upon Request)

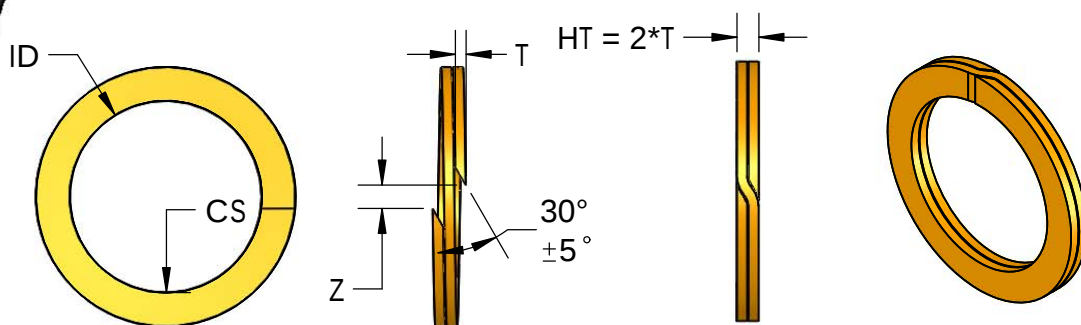
TL171 Dash Size	OD Ref.	ID	CS ±.001	T	Z	HT REF	TL171 Dash Size	OD Ref.	ID	CS ±.001	T	Z	HT REF
121	1.238	1.062	0.088	.025	.047 .093	0.054	215	1.304	1.062	0.121	.025	.047 .093	0.054
122	1.301	1.125	0.088			0.054	216	1.367	1.125	0.121			0.054
123	1.363	1.187	0.088			0.054	217	1.430	1.188	0.121			0.054
124	1.426	1.250	0.088			0.054	218	1.492	1.250	0.121			0.054
125	1.488	1.312	0.088			0.054	219	1.554	1.312	0.121			0.054
126	1.551	1.375	0.088			0.054	220	1.617	1.375	0.121			0.054
127	1.613	1.437	0.088			0.054	221	1.680	1.438	0.121			0.054
128	1.676	1.500	0.088			0.054	222	1.742	1.500	0.121			0.054
129	1.738	1.562	0.088			0.054	223	1.867	1.625	0.121			0.054
130	1.801	1.625	0.088		.062 .182	0.054	224	1.990	1.750	0.120		.093 .250	0.054
131	1.863	1.687	0.088			0.054	225	2.115	1.875	0.120			0.054
132	1.926	1.750	0.088			0.054	226	2.240	2.000	0.120			0.054
133	1.988	1.812	0.088			0.054	227	2.365	2.125	0.120			0.054
134	2.051	1.875	0.088			0.054	228	2.490	2.250	0.120			0.054
135	2.113	1.937	0.088			0.054	229	2.615	2.375	0.120			0.054
136	2.176	2.000	0.088			0.054	230	2.740	2.500	0.120			0.054
137	2.238	2.062	0.088			0.054	231	2.865	2.625	0.120			0.054
138	2.301	2.125	0.088			0.054	232	2.990	2.750	0.120			0.054
139	2.363	2.187	0.088			0.054	233	3.115	2.875	0.120			0.054
140	2.426	2.250	0.088	.029	.047 .093	0.054	234	3.240	3.000	0.120			0.054
141	2.488	2.312	0.088			0.054	235	3.365	3.125	0.120			0.054
142	2.551	2.375	0.088			0.054	236	3.490	3.250	0.120			0.054
143	2.613	2.437	0.088			0.054	237	3.615	3.375	0.120			0.054
144	2.676	2.500	0.088			0.054	238	3.740	3.500	0.120			0.054
145	2.738	2.562	0.088			0.054	239	3.865	3.625	0.120			0.054
146	2.801	2.625	0.088			0.054	240	3.990	3.750	0.120			0.054
147	2.863	2.687	0.088			0.054	241	4.115	3.875	0.120			0.054
148	2.926	2.750	0.088			0.054	242	4.240	4.000	0.120			0.054
149	2.988	2.812	0.088			0.054	243	4.365	4.125	0.120			0.054
210	0.992	0.750	0.121			0.054	244	4.490	4.250	0.120			0.054
211	1.054	0.812	0.121			0.054	245	4.615	4.375	0.120			0.054
212	1.117	0.875	0.121			0.054	246	4.740	4.500	0.120			0.054
213	1.180	0.938	0.121			0.054	247	4.865	4.625	0.120			0.054
214	1.242	1.000	0.121			0.054	248	4.990	4.750	0.120			0.054

T-LON® "TL171" Series Spiral Back-up Ring



T-LON® "TL171" Series Spiral Back-up Ring Sizes (More Available Upon Request)

TL171 Dash Size	OD Ref.	ID	CS ±.001	T	Z	HT REF	TL171 Dash Size	OD Ref.	ID	CS ±.001	T	Z	HT REF
249	5.115	4.875	0.120	.025 .029	.093 .250	0.054	333	2.870	2.500	0.185	.031 .036	.062 .188	0.067
250	5.240	5.000	0.120			0.054	334	2.995	2.625	0.185			0.067
251	5.365	5.125	0.120			0.054	335	3.120	2.750	0.185			0.067
252	5.490	5.250	0.120			0.054	336	3.245	2.875	0.185			0.067
253	5.615	5.375	0.120			0.054	337	3.370	3.000	0.185		.093 .250	0.067
254	5.740	5.500	0.120			0.054	338	3.495	3.125	0.185			0.067
255	5.865	5.625	0.120			0.054	339	3.620	3.250	0.185			0.067
256	5.990	5.750	0.120			0.054	340	3.745	3.375	0.185			0.067
257	6.115	5.875	0.120			0.054	341	3.870	3.500	0.185			0.067
258	6.240	6.000	0.120			0.054	342	3.995	3.625	0.185			0.067
259	6.490	6.250	0.120			0.054	343	4.120	3.750	0.185			0.067
260	6.740	6.500	0.120			0.054	344	4.245	3.875	0.185			0.067
261	6.990	6.750	0.120			0.054	345	4.370	4.000	0.185			0.067
262	7.240	7.000	0.120			0.054	346	4.495	4.125	0.185			0.067
263	7.490	7.250	0.120			0.054	347	4.620	4.250	0.185			0.067
264	7.740	7.500	0.120			0.054	348	4.745	4.375	0.185			0.067
265	7.990	7.750	0.120			0.054	349	4.870	4.500	0.185			0.067
266	8.240	8.000	0.120			0.054	425	4.976	4.500	0.238	.046 .052	.188 .312	0.098
267	8.490	8.250	0.120			0.054	426	5.101	4.625	0.238			0.098
268	8.740	8.500	0.120			0.054	427	5.226	4.750	0.238			0.098
269	8.990	8.750	0.120			0.054	428	5.351	4.875	0.238			0.098
270	9.240	9.000	0.120			0.054	429	5.476	5.000	0.238			0.098
271	9.490	9.250	0.120			0.054	430	5.601	5.125	0.238			0.098
272	9.740	9.500	0.120			0.054	431	5.726	5.250	0.238			0.098
273	9.990	9.750	0.120			0.054	432	5.851	5.375	0.238			0.098
274	10.240	10.000	0.120			0.054	433	5.976	5.500	0.238			0.098
325	1.870	1.500	0.185	.031 .036	.062 .188	0.067	434	6.101	5.625	0.238			0.098
326	1.995	1.625	0.185			0.067	435	6.226	5.750	0.238			0.098
327	2.120	1.750	0.185			0.067	436	6.351	5.875	0.238			0.098
328	2.245	1.875	0.185			0.067	437	6.476	6.000	0.238			0.098
329	2.370	2.000	0.185			0.067	438	6.726	6.250	0.238			0.098
330	2.495	2.125	0.185			0.067	439	6.976	6.500	0.238			0.098
331	2.620	2.250	0.185			0.067	440	7.226	6.750	0.238			0.098
332	2.745	2.375	0.185			0.067	441	7.476	7.000	0.238			0.098



T-LON® "TL171" Series Spiral Back-up Ring Sizes (More Available Upon Request)

TL171 Dash Size	OD Ref.	ID	CS ±.001	T	Z	HT REF
442	7.726	7.250	0.238	.046 .052	.188 .312	0.098
443	7.976	7.500	0.238			0.098
444	8.226	7.750	0.238			0.098
445	8.476	8.000	0.238			0.098
446	8.976	8.500	0.238			0.098
447	9.476	9.000	0.238			0.098
448	9.976	9.500	0.238			0.098
449	10.476	10.000	0.238			0.098
450	10.976	10.500	0.238			0.098
451	11.476	11.000	0.238			0.098
452	11.976	11.500	0.238			0.098
453	12.476	12.000	0.238			0.098
454	12.976	12.500	0.238			0.098
455	13.476	13.000	0.238			0.098
456	13.976	13.500	0.238			0.098
457	14.476	14.000	0.238			0.098
458	14.976	14.500	0.238			0.098
459	15.476	15.000	0.238			0.098
460	15.976	15.500	0.238			0.098