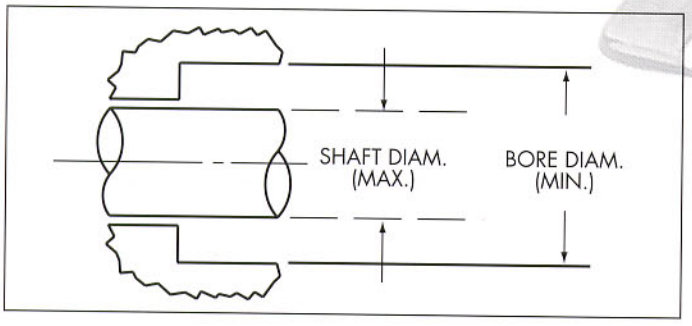
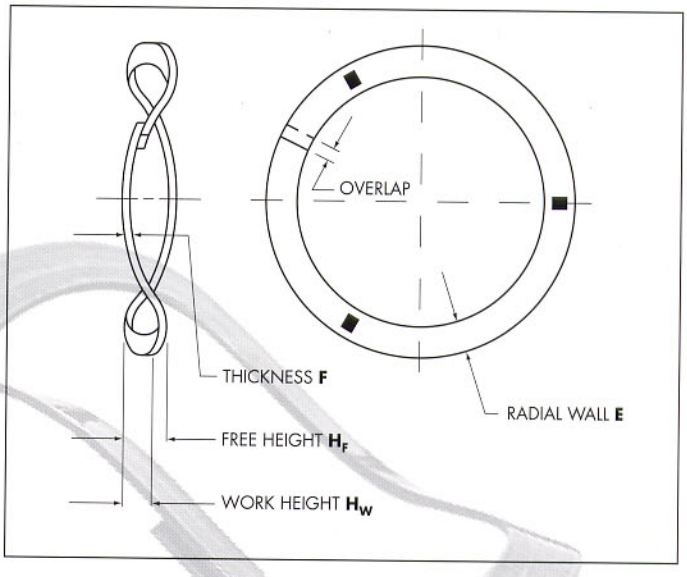
Standard Single Turn

Overlap Style—3 Waves

This space-saving series can function as a spring member and take up axial play, all while maintaining a precise spring force. Series TR-50 through TR-162 clear bore diameters ranging from .50" through 1.62", and shaft diameters from .40" through 1.31". Available in carbon steel or 17-7PH stainless steel. Other materials available (page 4). Contact factory for design assistance.





3 Wave Overlap End Construction

Inch Series

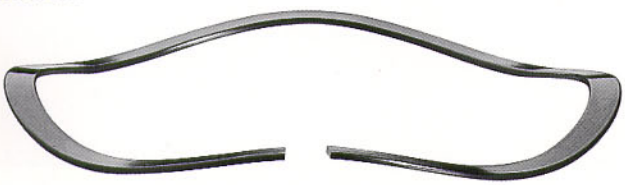
Spirolox P/N	Bore Ø Min.	Shaft Ø Max.	Load Lbs. P	Work Height H_W	Free Height H_F (Ref.)	Number Of Waves N	Spring Thickness F**	Radial Wall E**	Spring Rate Lbs./In.* K_R
TR 50	0.50	0.40	7	0.050	0.102	3	0.008	0.041	135
TR 62	0.62	0.48	10	0.050	0.076	3	0.010	0.059	386
TR 75	0.75	0.50	14	0.062	0.11	3	0.010	0.079	318
TR 87	0.87	0.62	16	0.062	0.10	3	0.013	0.095	432
TR 100	1.00	0.78	18	0.062	0.15	3	0.013	0.095	205
TR 112	1.12	0.84	20	0.078	0.13	3	0.017	0.134	385
TR 125	1.25	0.96	22	0.078	0.15	3	0.017	0.134	306
TR 137	1.37	1.09	24	0.078	0.18	3	0.017	0.134	235
TR 150	1.50	1.17	26	0.078	0.17	3	0.019	0.144	283
TR 162	1.62	1.31	28	0.078	0.16	3	0.019	0.144	343

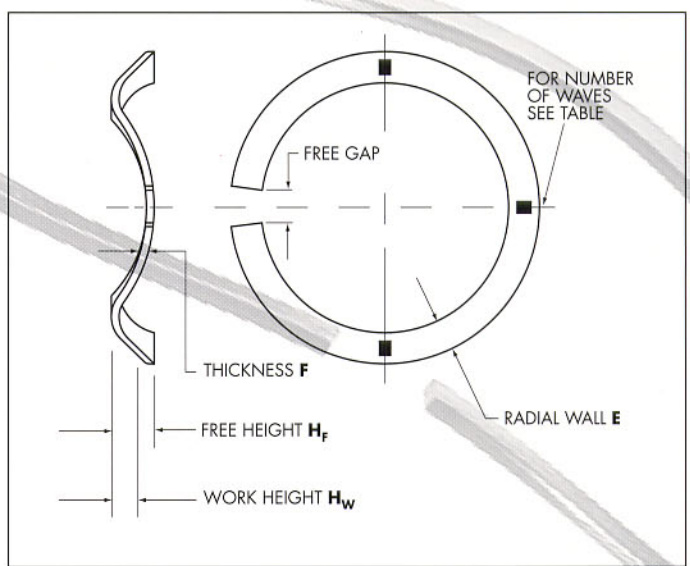
* *Spring rate theoretical.*
** *Material size subject to change.*

Standard Single Turn

Gap Style—4 or More Waves

These larger diameter wave springs, Series TR-175 to TR-1600, range from 1.75" through 16" bore diameter, and 1.44" through 15.14" shaft diameter. The spring force may be single use or repetitive. Available in carbon steel and 17-7PH stainless steel. Other materials available (page 4). Contact factory for design assistance.





4 Waves & Greater Gap End Construction

Inch Series

Spirolox P/N	Bore Ø Min.	Shaft Ø Max.	Load Lbs. P	Work Height H_W	Free Height H_F (Ref.)	Number Of Waves N	Spring Thickness F**	Radial Wall E**	Spring Rate Lbs./In.* K_R
TR 175	1.75	1.44	30	0.078	0.13	4	0.019	0.144	577
TR 187	1.87	1.56	32	0.078	0.12	4	0.019	0.144	770
TR 200	2.00	1.68	34	0.093	0.14	4	0.025	0.149	723
TR 212	2.12	1.80	36	0.093	0.12	4	0.025	0.149	1187
TR 225	2.25	1.93	38	0.093	0.15	4	0.025	0.149	667
TR 237	2.37	1.99	40	0.093	0.13	4	0.025	0.169	968
TR 250	2.50	2.12	42	0.093	0.17	4	0.025	0.169	545
TR 262	2.62	2.24	44	0.093	0.15	4	0.025	0.169	713
TR 275	2.75	2.34	46	0.109	0.14	4	0.031	0.189	1295
TR 287	2.87	2.47	48	0.109	0.15	4	0.031	0.189	1132
TR 300	3.00	2.59	50	0.109	0.19	4	0.031	0.189	617
TR 312	3.12	2.71	52	0.109	0.17	4	0.031	0.189	874
TR 325	3.25	2.75	54	0.109	0.17	4	0.031	0.229	960
TR 337	3.37	2.84	56	0.109	0.17	4	0.031	0.229	857
TR 350	3.50	3.00	58	0.109	0.18	4	0.031	0.229	764
TR 362	3.62	3.12	60	0.109	0.20	4	0.031	0.229	691
TR 375	3.75	3.25	62	0.109	0.21	4	0.031	0.229	622
TR 387	3.87	3.37	64	0.109	0.22	4	0.031	0.229	568
TR 400	4.00	3.50	66	0.109	0.19	5	0.031	0.229	815
TR 412	4.12	3.62	67	0.109	0.16	5	0.031	0.229	1249
TR 425	4.25	3.74	69	0.109	0.17	5	0.031	0.229	1135

* *Spring rate theoretical.*
** *Material size subject to change.*

Standard Single Turn

4 Waves & Greater Gap End Construction (Cont.) **Inch Series**

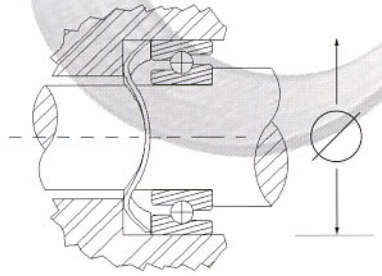
Spirolox P/N	Bore Ø Min.	Shaft Ø Max.	Load Lbs. P	Work Height H_W	Free Height H_F (Ref.)	Number Of Waves N	Spring Thickness F**	Radial Wall E**	Spring Rate Lbs./In.* K_R
TR 437	4.37	3.86	70	0.109	0.18	5	0.031	0.229	1041
TR 450	4.50	3.99	72	0.109	0.18	5	0.031	0.229	952
TR 462	4.62	4.11	73	0.125	0.21	5	0.031	0.229	884
TR 475	4.75	4.24	75	0.125	0.22	5	0.031	0.229	814
TR 487	4.87	4.37	76	0.125	0.23	5	0.031	0.229	755
TR 500	5.00	4.49	78	0.125	0.24	5	0.031	0.229	699
TR 512	5.12	4.61	80	0.125	0.25	5	0.031	0.229	653
TR 525	5.25	4.74	82	0.125	0.26	5	0.031	0.229	608
TR 537	5.37	4.86	84	0.125	0.27	5	0.031	0.229	570
TR 550	5.50	4.99	86	0.125	0.20	6	0.031	0.229	1198
TR 562	5.62	5.11	88	0.125	0.20	6	0.031	0.229	1124
TR 575	5.75	5.24	90	0.125	0.21	6	0.031	0.229	1050
TR 587	5.87	5.36	92	0.125	0.22	6	0.031	0.229	989
TR 600	6.00	5.49	94	0.125	0.23	6	0.031	0.229	928
TR 612	6.12	5.61	96	0.125	0.23	6	0.031	0.229	877
TR 625	6.25	5.73	98	0.125	0.24	6	0.031	0.229	826
TR 637	6.37	5.86	100	0.125	0.25	6	0.031	0.229	784
TR 650	6.50	5.98	102	0.125	0.26	6	0.031	0.229	741
TR 675	6.75	6.23	104	0.125	0.28	6	0.031	0.229	668
TR 700	7.00	6.19	106	0.156	0.25	6	0.035	0.312	1158
TR 725	7.25	6.44	108	0.156	0.26	6	0.035	0.312	1034
TR 750	7.50	6.69	110	0.156	0.27	6	0.035	0.312	928
TR 775	7.75	6.94	114	0.156	0.29	6	0.035	0.312	835
TR 800	8.00	7.19	118	0.156	0.31	6	0.035	0.312	755
TR 825	8.25	7.44	122	0.156	0.33	6	0.035	0.312	685
TR 850	8.50	7.68	126	0.156	0.26	7	0.035	0.312	1224
TR 875	8.75	7.93	130	0.156	0.27	7	0.035	0.312	1117
TR 900	9.00	8.18	134	0.156	0.23	8	0.035	0.312	1838
TR 950	9.50	8.68	142	0.156	0.21	9	0.035	0.312	2483
TR 1000	10.00	9.17	150	0.156	0.23	9	0.035	0.312	2121
TR 1050	10.50	9.67	158	0.156	0.24	9	0.035	0.312	1820
TR 1100	11.00	10.17	166	0.156	0.26	9	0.035	0.312	1571
TR 1150	11.50	10.66	174	0.156	0.28	9	0.035	0.312	1368
TR 1200	12.00	11.16	182	0.156	0.31	9	0.035	0.312	1200
TR 1250	12.50	11.66	190	0.156	0.27	10	0.035	0.312	1608
TR 1300	13.00	12.16	198	0.156	0.29	10	0.035	0.312	1425
TR 1350	13.50	12.65	206	0.156	0.32	10	0.035	0.312	1271
TR 1400	14.00	13.15	214	0.156	0.25	12	0.035	0.312	2349
TR 1450	14.50	13.65	221	0.156	0.26	12	0.035	0.312	2107
TR 1500	15.00	14.13	230	0.156	0.28	12	0.035	0.312	1905
TR 1550	15.50	14.64	239	0.156	0.26	13	0.035	0.312	2365
TR 1600	16.00	15.14	248	0.156	0.27	13	0.035	0.312	2145

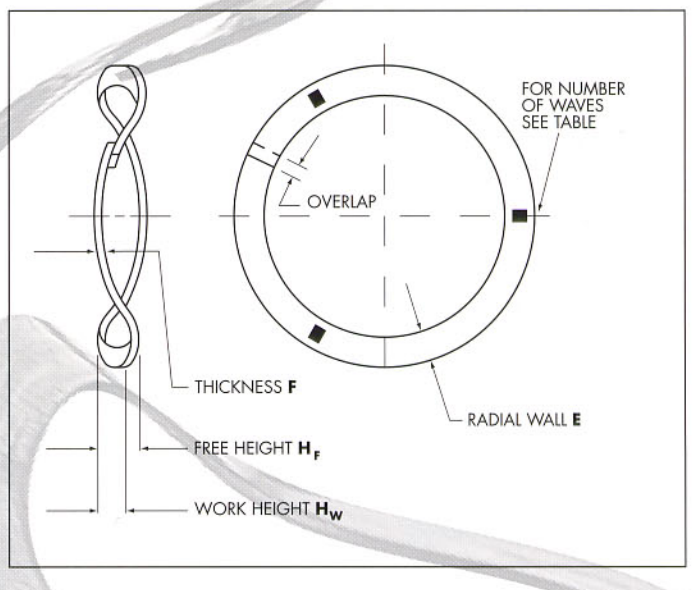
* *Spring rate theoretical.*
** *Material size subject to change.*

Bearing Preload

Overlap Style—3 and 4 Waves

Designed to lightly contact the housing, these springs eliminate diametral clearance within a bearing. Series TB-63 through TB-374 correspond with popular metric bearing sizes. Sizes range from 16 mm through 95 mm bore diameter. Available in carbon steel and 17-7PH stainless steel. For bearing preload cross-references, see page 12.





3 and 4 Wave Overlap End Construction

Metric Series

Spirolox P/N	Bearing Outside Ø	Load Newtons P	Work Height H_W	Free Height H_F (Ref.)	Number Of Waves N	Spring Thickness F**	Radial Wall E**	Spring Rate N/mm* K_R
TB 63	16	44.5	1.57	2.1	3	0.25	2.00	81
TB 75	19	53.4	1.57	3.3	3	0.25	2.00	31
TB 87	22	62.3	1.57	2.4	3	0.34	2.41	75
TB 95	24	66.7	1.57	3.0	3	0.34	2.41	47
TB 102	26	71.2	1.98	2.4	3	0.43	3.40	164
TB 110	28	75.6	1.98	3.1	3	0.43	3.40	68
TB 118	30	84.5	1.98	3.3	3	0.43	3.40	64
TB 126	32	89.0	1.98	3.1	3	0.43	3.40	80
TB 138	35	97.9	1.98	3.6	3	0.43	3.40	59
TB 146	37	102.3	1.98	4.0	3	0.48	3.65	51
TB 158	40	111.2	1.98	4.7	3	0.48	3.65	41
TB 165	42	115.7	1.98	2.6	4	0.48	3.65	184
TB 185	47	129.0	1.98	3.6	4	0.48	3.65	80
TB 205	52	142.4	2.36	3.5	4	0.64	3.78	125
TB 217	55	151.3	2.36	3.2	4	0.64	3.78	189
TB 244	62	169.1	2.36	4.1	4	0.64	4.29	97
TB 268	68	186.9	2.77	3.5	4	0.79	4.80	241
TB 276	70	191.3	2.77	3.6	4	0.79	4.80	220
TB 284	72	195.8	2.77	4.3	4	0.79	4.80	128
TB 295	75	204.7	2.77	3.9	4	0.79	4.80	176
TB 315	80	218.0	2.77	5.0	4	0.79	4.80	98
TB 335	85	231.4	2.77	4.3	4	0.79	5.81	149
TB 354	90	249.2	2.77	5.6	4	0.79	5.81	88
TB 374	95	262.5	2.77	5.3	4	0.79	5.81	104

* *Spring rate theoretical.*

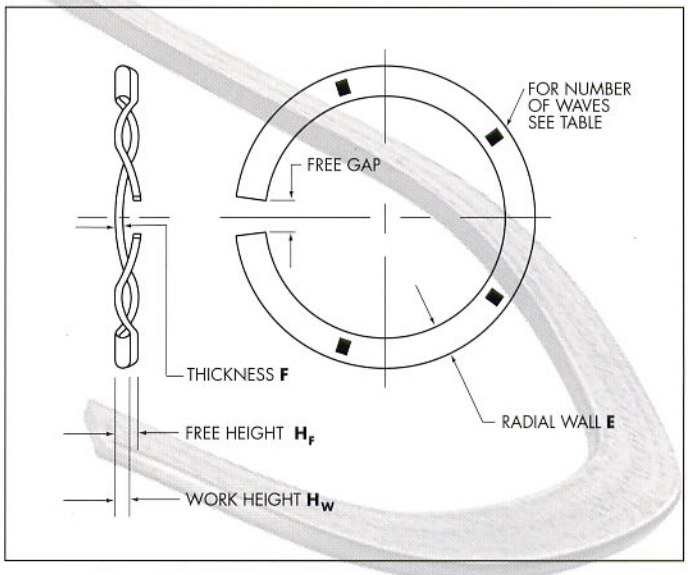
** *Material size subject to change.*

All dimensions metric.

Bearing Preload

Gap Style—5 or More Waves

Designed to lightly contact the housing, these springs eliminate diametral clearance within a bearing. Series TB-394 through TB-2284 correspond with popular metric bearing sizes. Sizes range from 100 mm through 580 mm bore diameter. Available in carbon steel and 17-7PH stainless steel. For bearing preload cross-references, see page 12.



5 Wave and Greater Gap End Construction

Metric Series

Spirolox P/N	Bearing Outside Ø	Load Newtons P	Work Height H_W	Free Height H_F (Ref.)	Number Of Waves N	Spring Thickness F**	Radial Wall E**	Spring Rate N/mm* K_R
TB 394	100	275.9	2.77	3.9	5	0.79	5.81	248
TB 413	105	289.2	2.77	4.1	5	0.79	5.81	213
TB 433	110	302.6	2.77	4.4	5	0.79	5.81	184
TB 453	115	315.9	3.18	5.2	5	0.79	5.81	160
TB 472	120	329.3	3.18	5.5	5	0.79	5.81	140
TB 492	125	342.6	3.18	6.0	5	0.79	5.81	123
TB 512	130	356.0	3.18	6.4	5	0.79	5.81	109
TB 532	135	369.3	3.18	7.0	5	0.79	5.81	97
TB 551	140	382.7	3.18	5.1	6	0.79	5.81	203
TB 571	145	396.0	3.18	5.4	6	0.79	5.81	182
TB 591	150	404.9	3.18	5.7	6	0.79	5.81	164
TB 630	160	440.5	3.18	6.5	6	0.79	5.81	134
TB 650	165	453.9	3.18	6.9	6	0.79	5.81	121
TB 669	170	467.2	3.18	7.4	6	0.79	5.81	111
TB 689	175	480.6	3.96	5.9	6	0.89	9.53	252
TB 709	180	493.9	3.96	6.1	6	0.89	9.53	230
TB 728	185	507.3	3.96	6.4	6	0.89	9.53	211
TB 748	190	520.6	3.96	6.6	6	0.89	9.53	194
TB 787	200	547.3	3.96	5.7	7	0.89	9.53	324
TB 807	205	560.7	3.96	5.8	7	0.89	9.53	299
TB 827	210	578.5	3.96	6.0	7	0.89	9.53	278
TB 847	215	591.8	3.96	6.3	7	0.89	9.53	258
TB 866	220	605.2	3.96	6.5	7	0.89	9.53	240
TB 886	225	618.5	3.96	5.6	8	0.89	9.53	381

* *Spring rate theoretical.*

** *Material size subject to change.*

All dimensions metric.