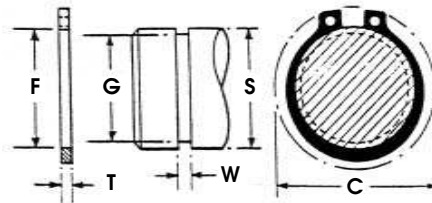


ANSI (Inch) Retaining Rings External

.125" to 10.00"
Standard Material
12 to 20 Beryllium Cooper
25 up Carbon Spring Steel

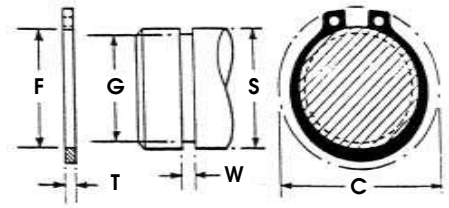
Standard Finish
12 to 23 Finish
25 up Phosphate



Ametric® Part No.	Shaft Diameter S			Groove Diameter Width				Ring Free Diameter				Dia. C Fitted Approx. Inches	Thrust Load lbs.
	Fraction Inch	Decimal Inch	mm	G Inch	Total Inch	W Inch	Total Inch	T Inch	Total Inches	F Inches	Total Inches		
5100-012	1/8	.125	-	.117	±.0015	.012		.010	±.001	.112		.010	110
5100-015	5/32	.156	-	.146	±.0015	.012		.010	±.001	.142		.010	130
5100-018	3/16	.188	-	.175	±.0015	.018	+0.002	.015	±.002	.168	+0.002	.015	240
5100-019	-	.197	5	.185	±.0015	.018	-0.000	.015	±.002	.179	-0.004	.015	250
5100-021	7/32	.219	-	.205	±.0015	.018		.015	±.002	.196		.015	280
5100-023	15/16	.236	-	.222	±.0015	.018		.015	±.002	.215		.015	310
5100-025	1/4	.250	-	.230	±.002	.029		.025	±.002	.225		.025	700
5100-027	-	.276	7	.255	±.002	.029		.025	±.002	.250		.025	770
5100-028	9/32	.281	-	.261	±.002	.029		.025	±.002	.256		.025	785
5100-031	5/16	.312	-	.290	±.002	.029		.025	±.002	.281		.025	940
5100-034	11/32	.344	-	.321	±.002	.029		.025	±.002	.309		.025	960
5100-035	-	.354	9	.330	±.002	.029		.025	±.002	.320		.025	990
5100-037	3/8	.375	-	.352	±.002	.029	+0.003	.025	±.002	.338	+0.002	.025	1050
5100-039	-	.394	10	.369	±.002	.029	-0.000	.025	±.002	.354	-0.005	.025	1100
5100-040	13/32	.406	-	.382	±.002	.029		.025	±.002	.366		.025	1180
5100-043	7/16	.438	-	.412	±.002	.029		.025	±.002	.395		.025	1220
5100-046	15/32	.469	-	.443	±.002	.029		.025	±.002	.428		.025	1300
5100-050	1/2	.500	-	.468	±.002	.039		.035	±.002	.461		.035	1980
5100-055	-	.551	14	.519	±.002	.039		.035	±.002	.509		.035	2180
5100-056	9/16	.562	-	.530	±.002	.039		.035	±.002	.521		.035	2200
5100-059	19/32	.594	-	.559	±.003	.039		.035	±.002	.550		.035	2350
5100-062	5/8	.625	-	.588	±.003	.039		.035	±.002	.579		.035	2460
5100-066	-	.669	17	.629	±.003	.039		.035	±.002	.621		.035	2650
5100-068	43/64	.672	-	.631	±.003	.039		.035	±.002	.621		.035	2650
5100-075	11/16	.688	-	.646	±.003	.046		.042	±.002	.635	+0.005	.042	4050
5100-078	3/4	.750	-	.704	±.003	.046	+0.003	.042	±.002	.693	-0.010	.042	4420
5100-081	25/32	.781	-	.733	±.003	.046	-0.000	.042	±.002	.722		.042	4600
5100-084	13/16	.812	-	.762	±.003	.046		.042	±.002	.751		.042	4800
5100-087	7/8	.875	-	.821	±.003	.046		.042	±.002	.810		.042	5150
5100-093	15/16	.938	-	.882	±.003	.046		.042	±.002	.867		.042	5600
5100-098	63/64	.984	25	.926	±.003	.046		.042	±.002	.910		.042	5800
5100-100	1	1.000	-	.940	±.003	.046		.042	±.002	.925		.042	6000
5100-102	-	1.023	26	.961	±.003	.046		.042	±.002	.946		.042	6050
5100-106	1 1/16	1.062	-	.998	±.004	.056		.050	±.002	.982		.050	7500
5100-112	1 1/8	1.125	-	1.059	±.004	.056		.050	±.002	1.041		.050	7900
5100-118	1 3/16	1.188	-	1.118	±.004	.056		.050	±.002	1.098		.050	8400
5100-125	1 1/4	1.250	-	1.176	±.004	.056	+0.004	.050	±.002	1.156	+0.010	.050	8800
5100-131	1 5/16	1.312	-	1.232	±.004	.056	-0.000	.050	±.002	1.214	-0.015	.050	9300
5100-137	1 3/8	1.375	-	1.291	±.004	.056		.050	±.002	1.272		.050	9700
5100-143	1 7/16	1.438	-	1.350	±.004	.056		.050	±.002	1.333		.050	10200
5100-150	1 1/2	1.500	-	1.406	±.004	.056		.050	±.002	1.387		.050	10550
5100-156	1 9/16	1.562	-	1.468	±.005	.068		.062	±.002	1.446		.062	13700
5100-162	1 5/8	1.625	-	1.529	±.005	.068		.062	±.003	1.503		.062	14200
5100-168	1 11/16	1.688	-	1.589	±.005	.068		.062	±.003	1.560		.062	14800
5100-175	1 3/4	1.750	-	1.650	±.005	.068	+0.004	.062	±.003	1.618	+0.013	.062	15300
5100-177	-	1.722	45	1.669	±.005	.068	-0.000	.062	±.003	1.637	-0.020	.062	15500
5100-181	1 13/16	1.812	-	1.708	±.005	.068		.062	±.003	1.675		.062	15850
5100-187	1 7/8	1.875	-	1.769	±.005	.068		.062	±.003	1.735		.062	16400
5100-196	-	1.968	50	1.857	±.005	.068		.062	±.003	1.819		.062	16900
5100-200	2	2.000	-	1.886	±.005	.068		.062	±.003	1.850		.062	17500
5100-206	2 1/16	2.062	-	1.946	±.006	.086		.078	±.003	1.906		.078	22750
5100-212	2 1/8	2.125	-	2.003	±.006	.086	+0.005	.078	±.003	1.964	+0.015	.078	23400
5100-215	2 5/32	2.156	-	2.032	±.006	.086	-0.000	.078	±.003	1.993	-0.025	.078	23800
5100-225	2 1/4	2.250	-	2.120	±.006	.086		.078	±.003	2.081		.078	24800

Full Range Available To Size 10 Inches

ANSI (Inch) Retaining Rings External



.125" to 10.00"
Standard Material
12 to 20 Beryllium Cooper
25 up Carbon Spring Steel

Standard Finish
12 to 23 Finish
25 up Phosphate

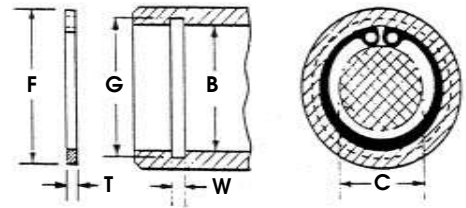
Ametric® Part No.	Shaft Diameter S			Groove Diameter Width				Ring Free Dia.						Approx Weight Per 100 Pieces	Dia. C Fitted Approx. Inches	Thrust Load lbs.	
	Fraction Inch	Decimal Inch	mm	G Inch	Total Inch	W Inch	Total Inch	n (min)	T Inch	Total Inches	F Inches	Total Inches	L (max)				b
5100-231	2 5/16	2.312	-	2.178		.086	.210	.078		2.139		.272	.222	.123	28.0	2.94	25400
5100-237	2 3/8	2.375	-	2.239		.086	.213	.078		2.197	+ .015	.236	.228	.123	29.2	3.01	26150
5100-243	2 7/16	2.438	-	2.299		.086	.217	.078		2.255	- .025	.236	.228	.123	29.5	3.07	26900
5100-250	2 1/2	2.500	-	2.360		.086	.219	.078		2.313		.236	.228	.123	29.7	3.12	27600
5100-255	-	2.559	65	2.419		.086	.219	.078		2.377		.258	.250	.123	33.9	3.18	28200
5100-262	2 5/8	2.625	-	2.481		.086	.225	.078		2.428		.236	.228	.123	35	3.25	29000
5100-268	2 11/16	2.688	-	2.541		.086	.230	.078		2.485		.273	.246	.123	36	3.32	29600
5100-275	2 3/4	2.750	-	2.602		.103	.231	.093		2.543		.284	.275	.123	42.5	3.45	36100
5100-287	2 7/8	2.875	-	2.721		.103	.240	.093		2.659		.268	.260	.123	48.5	3.57	37800
5100-293	2 15/16	2.938	-	2.779		.103	.247	.093		2.717		.268	.260	.123	50.0	3.64	38700
5100-300	3	3.000	-	2.838		.103	.252	.093		2.775		.268	.260	.123	52.0	3.69	39500
5100-306	3 1/16	3.062	-	2.898		.103	.255	.093		2.832		.268	.260	.123	47.5	3.74	40300
5100-312	3 1/8	3.125	-	2.957		.103	.261	.093		2.892	+ .020	.305	.272	.123	58.0	3.82	41100
5100-315	3 5/32	3.156	-	2.986	±.006	.103	+ .005	.264	.093	±.003	- .030	.284	.276	.123	59.0	3.85	41500
5100-325	3 1/4	3.250	-	3.076		.103	- .000	.270	.093			3.006	.284	.123	62.0	3.95	42800
5100-334	3 11/32	3.346	85	3.166		.103		.279	.093			3.092	.284	.123	64.0	4.04	44000
5100-343	3 7/16	3.438	-	3.257		.103		.280	.093			3.179	.284	.123	66.0	4.14	45300
5100-350	3 1/2	3.500	-	3.316		.120		.285	.109			3.237	.320	.123	72.0	4.25	53900
5100-354	-	3.543	90	3.357		.120		.288	.109			3.277	.320	.123	73.0	4.29	54650
5100-362	3 5/8	3.625	-	3.435		.120		.294	.109			3.352	.323	.123	76.0	4.37	55900
5100-368	3 11/16	3.688	-	3.493		.120		.301	.109			3.410	.335	.123	80.0	4.43	56800
5100-375	3 3/4	3.750	-	3.552		.120		.306	.109			3.468	.337	.123	83.0	4.50	57700
5100-387	3 7/8	3.875	-	3.673		.120		.312	.109			3.584	.335	.123	88.0	4.60	59600
5100-393	3 15/16	3.938	100	3.734		.120		.315	.109			3.642	.323	.123	95.0	4.70	60700
5100-400	4	4.000	-	3.792		.120		.321	.109			3.700	.352	.123	101.0	4.78	61700
5100-425	4 1/4	4.250	-	4.065		.120		.287	.109			3.989	.323	.123	112.0	5.09	65500
5100-437	4 3/8	4.375	-	4.190		.120		.287	.109			4.106	.323	.123	115.0	5.22	67400
5100-450	4 1/2	4.500	-	4.310		.120		.294	.109			4.223	.323	.123	121.0	5.37	69300
5100-475	4 3/4	4.750	-	4.550		.120		.309	.109			4.458	.352	.123	133.0	5.67	73200
5100-500	5	5.000	127	4.790		.120		.324	.109			4.692	.352	.151	149.0	5.96	77000
5100-525	5 1/4	5.250	-	5.030		.139	.339	.125		4.927		.457	.372	.151	190.0	6.27	92700
5100-550	5 1/2	5.500	-	5.265	±.007	.139	+ .006	.363	.125	±.004	+ .020	.457	.390	.151	202.0	6.57	97200
5100-575	5 3/4	5.750	-	5.505		.139	- .000	.378	.125		- .040	.457	.408	.151	220.0	6.86	101600
5100-600	6	6.000	-	5.745		.139		.393	.125			5.631	.457	.151	240.0	7.16	105900
5100-625	6 1/4	6.250	-	5.985		.174	.409	.156		5.866		.508	.396	.151	282.0	7.46	137700
5100-650	6 1/2	6.500	-	6.225		.174	.425	.156		6.100	+ .020	.508	.438	.151	330.0	7.87	143300
5100-675	6 3/4	6.750	-	6.465		.174	.440	.156		6.335	- .050	.508	.458	.182	356.0	8.06	148800
5100-700	7	7.000	-	6.705	±.008	.174	+ .008	.455	.156	±.005		.508	.460	.182	388.0	8.36	154000
5100-750	7 1/2	7.500	-	7.180		.209	- .000	.492	.187			7.039	.632	.182	584.0	8.96	198200
5100-800	8	8.000	-	7.660		.209		.522	.187			7.508	.632	.182	640.0	9.56	211400
5100-850	8 1/2	8.500	-	8.140		.209		.562	.187		+ .020	.632	.573	.182	692.0	10.16	224600
5100-900	9	9.000	-	8.620		.209		.582	.187		- .060	.632	.609	.182	737.0	10.75	237800
5100-950	9 1/2	9.500	-	9.100		.209		.612	.187			8.915	.632	.182	785.0	11.34	251000
5100-1000	10	10.00	254	9.575		.209		.650	.187			9.385	.632	.182	910.0	11.94	264200

Full Range Available To Size 10 Inches

ANSI (Inch) Retaining Rings Internal

.250" to 10.00"
Standard Material
Carbon Spring Steel

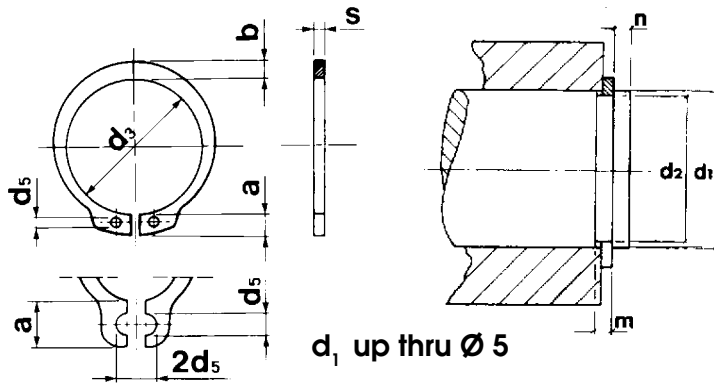
Standard Finish
Phosphate



Ametric® Part No.	Shaft Diameter B			Groove Diameter Width					Ring Free Dia.						Approx Weight Per 100 Pieces	Dia. C Fitted Approx. Inches	Thrust Load lbs.	
	Fraction Inch	Decimal Inch	mm	G Inch	Total Inch	W Inch	Total Inch	n (min)	T Inch	Total Inches	F Inches	Total Inches	L (max)	b				h (min)
5000-025	1/4	.250	-	.268	±.001	.018	+0.002	-	.015	±.002	.280	+0.10	-	-	-	-	.11	420
5000-031	5/16	.312	-	.330		.018	-0.000	-	.015		.346	-0.005	-	-	-	-	.17	520
5000-037	3/8	.375	-	.397		.029		-	.025		.415		-	-	-	-	.20	1050
5000-043	7/16	.438	-	.461		.029		-	.025		.482		-	-	-	-	.23	1220
5000-045	29/64	.453	-	.477		.029		-	.025		.498		-	-	-	-	.25	1280
5000-050	1/2	.500	-	.530	±.002	.039	+0.003	-	.035		.548		-	-	-	-	.26	1980
5000-051	-	.513	13	.542		.039	-0.000	-	.035		.560	+0.10	-	-	-	-	.27	2030
5000-056	9/16	.562	-	.596		.039		-	.035		.620	-0.005	-	-	-	-	.28	2220
5000-062	5/8	.625	-	.665		.039		-	.035		.694		-	-	-	-	.34	2460
5000-068	11/16	.688	-	.732		.039		-	.035		.763		-	-	-	-	.40	2690
5000-075	3/4	.750	19	.796		.039		-	.035		.831		-	-	-	-	.45	3000
5000-077	-	.777	19.7	.825		.046		-	.042		.859		-	-	-	-	.48	4550
5000-081	13/16	.812	-	.862		.046		-	.042		.901		-	-	-	-	.49	4800
5000-086	-	.866	22	.920		.046		-	.042		.961		-	-	-	-	.54	5100
5000-087	7/8	.875	-	.931	±.003	.046		-	.042		.971	+0.15	-	-	-	-	.55	5150
5000-090	-	.901	22.9	.959		.046		-	.042		1.000	-0.10	-	-	-	-	.56	5350
5000-093	15/16	.938	-	1.000		.046		-	.042		1.041		-	-	-	-	.61	5600
5000-100	1	1.000	-	1.066		.046		-	.042		1.111		-	-	-	-	.66	6000
5000-102	-	1.023	26	1.091		.046		-	.042	±.002	1.136		-	-	-	-	.69	6050
5000-106	1 1/16	1.062	27	1.130		.056		-	.050		1.180		-	-	-	-	.69	7500
5000-112	1 1/8	1.125	-	1.197		.056		-	.050		1.249		-	-	-	-	.74	7900
5000-118	1 3/16	1.188	30	1.262		.056		-	.050		1.319		-	-	-	-	.80	8400
5000-125	1 1/4	1.250	32	1.339		.056		-	.050		1.388	+0.025	-	-	-	-	.88	8800
5000-131	1 5/16	1.312	-	1.396		.056		-	.050		1.456	-0.020	-	-	-	-	.93	9300
5000-137	1 3/8	1.375	35	1.461	±.004	.056		-	.050		1.526		-	-	-	-	.99	9700
5000-143	1 7/16	1.438	-	1.528		.056		-	.050		1.596		-	-	-	-	1.06	10200
5000-145	-	1.456	37	1.548		.056		-	.050		1.616		-	-	-	-	1.08	10300
5000-150	1 1/2	1.500	-	1.594		.056		-	.050		1.660		-	-	-	-	1.12	10550
5000-156	1 9/16	1.562	-	1.658		.068	+0.004	-	.062		1.734		-	-	-	-	1.14	13700
5000-156	-	1.575	40	1.671		.068	-0.000	-	.062		1.734		-	-	-	-	1.15	13700
5000-162	1 5/8	1.625	-	1.725		.068		-	.062		1.804		-	-	-	-	1.15	14200
5000-165	-	1.653	42	1.755		.068		-	.062		1.835		-	-	-	-	1.17	14500
5000-168	1 11/16	1.688	-	1.792		.068		-	.062		1.874	+0.035	-	-	-	-	1.21	14800
5000-175	1 3/4	1.750	-	1.858		.068		-	.062		1.942	-0.025	-	-	-	-	1.26	15300
5000-181	1 13/16	1.812	47	1.922	±.005	.068		-	.062		2.012		-	-	-	-	1.32	15900
5000-187	1 7/8	1.875	-	1.989		.068		-	.062		2.054		-	-	-	-	1.39	16450
5000-193	1 15/16	1.938	-	2.056		.068		-	.062		2.072		-	-	-	-	1.45	17000
5000-200	2	2.00	-	2.122		.068		-	.062		2.141		-	-	-	-	1.50	17500
5000-206	2 1/16	2.062	52	2.186		.086		-	.078		2.210		-	-	-	-	1.54	22750
5000-212	2 1/8	2.125	-	2.251		.086		-	.078		2.280		-	-	-	-	1.58	23400
5000-218	2 3/16	2.188	55	2.318		.086		-	.078		2.350		-	-	-	-	1.64	24200
5000-225	2 1/4	2.250	-	2.382		.086		-	.078	±.003	2.415		-	-	-	-	1.69	24850
5000-231	2 5/16	2.312	-	2.450		.086		-	.078		2.490		-	-	-	-	1.75	25400
5000-237	2 3/8	2.375	-	2.517		.086		-	.078		2.560		-	-	-	-	1.81	26150
5000-244	2 7/16	2.438	-	2.584		.086		-	.078		2.630		-	-	-	-	1.86	26900
5000-250	2 1/2	2.500	-	2.648	±.006	.086	+0.005	-	.078		2.702	+0.040	-	-	-	-	1.91	27600
5000-250	2 17/32	2.531	-	2.681		.086	-0.000	-	.078		2.775	-0.030	-	-	-	-	1.94	27650
5000-262	2 5/8	2.625	-	2.781		.103		-	.093		2.910		-	-	-	-	2.02	34500
5000-268	2 11/16	2.688	68	2.848		.103		.240	.093		2.980		.268	.236	.108	35.0	2.06	35400
5000-275	2 3/4	2.750	-	2.914		.103		.246	.093		3.050		.284	.234	.108	35.0	2.12	36100
5000-281	2 13/16	2.812	72	2.980		.103		.252	.093		3.121		.284	.230	.108	36.0	2.18	36900
5000-287	2 7/8	2.875	-	3.051		.103		.264	.093		3.191		.284	.240	.108	41.0	2.22	37800
5000-300	3	3.000	75	3.182		.103		.2736	.093		3.325		.284	.250	.108	42.5	2.35	39500

Full Range Available To Size 10 Inches
Most Sizes Available in Zinc Plated and Stainless Steel

External Retaining Rings (A) DIN 471



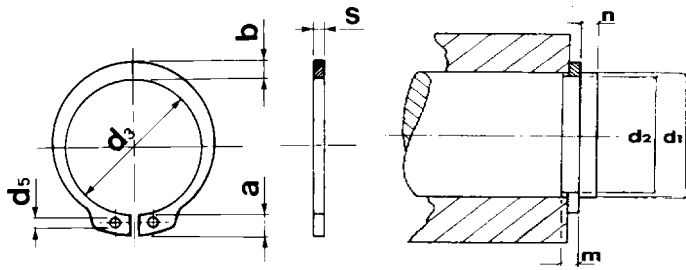
d₁ up thru Ø 27 = C60-DIN 17222
 d₁ Ø 28 and above = C75 DIN 17222
 d₁ up thru Ø 48 = 47- 54 HRC hardness
 d₁ Ø 50 and above = 44 - 51 HRC hardness

d ₁	S h11	d ₃	a max.	b	d ₅ min.	d ₂	Groove Width min.	Weight kg/1000
A 3	0.40	2.7	2.0	1.6	1	2.8	0.50	0.017
A 4	0.40	3.7	2.2	0.9	1	3.8	0.50	0.035
A 5	0.60	4.7	2.5	1.1	1	4.8	0.70	0.081
A 6	0.70	5.6	2.7	1.3	1.2	5.7	0.80	0.124
A 7	0.80	6.5	3.1	1.4	1.2	6.7	0.90	0.198
A 8	0.80	7.4	3.2	1.5	1.2	7.6	0.90	0.227
A 9	1.00	8.4	3.3	1.7	1.2	8.6	1.10	0.382
A 10	1.00	9.3	3.3	1.8	1.5	9.6	1.10	0.416
A 11	1.00	10.2	3.3	1.8	1.5	10.5	1.10	0.465
A 12	1.00	11.0	3.3	1.8	1.7	11.5	1.10	0.487
A 13	1.00	11.9	3.4	2.0	1.7	12.4	1.10	0.587
A 14	1.00	12.9	3.5	2.1	1.7	13.4	1.10	0.655
A 15	1.00	13.8	3.6	2.2	1.7	14.3	1.10	0.746
A 16	1.00	14.7	3.7	2.2	1.7	15.2	1.10	0.794
A 17	1.00	15.7	3.8	2.3	1.7	16.2	1.10	0.901
A 18	1.20	16.5	3.9	2.4	2	17.0	1.30	1.19
A 19	1.20	17.5	3.9	2.5	2	18.0	1.30	1.27
A 20	1.20	18.5	4.0	2.6	2	19.0	1.30	1.36
A 21	1.20	19.5	4.1	2.7	2	20.0	1.30	1.47
A 22	1.20	20.5	4.2	2.8	2	21.0	1.30	1.62
A 23	1.20	21.5	4.3	2.9	2	22.0	1.30	1.77
A 24	1.20	22.2	4.4	3.0	2	22.9	1.30	1.87
A 25	1.20	23.2	4.4	3.0	2	23.9	1.30	1.92
A 26	1.20	24.2	4.5	3.1	2	24.9	1.30	2.11
A 27	1.20	24.9	4.6	3.1	2	25.6	1.30	2.19
A 28	1.50	25.9	4.7	3.2	2	26.6	1.60	2.88
A 29	1.50	26.9	4.8	3.4	2	27.6	1.60	3.11
A 30	1.50	27.9	5.0	3.5	2	28.6	1.60	3.39
A 31	1.50	28.6	5.0	3.5	2.5	29.3	1.60	3.42
A 32	1.50	29.6	5.2	3.6	2.5	30.3	1.60	3.55
A 33	1.50	30.5	5.2	3.7	2.5	31.3	1.60	4.01
A 34	1.50	31.5	5.4	3.8	2.5	32.3	1.60	4.14
A 35	1.50	32.2	5.6	3.9	2.5	33.0	1.60	4.34
A 36	1.75	33.2	5.6	4.0	2.5	34.0	1.85	4.80
A 37	1.75	34.2	5.7	4.1	2.5	35.0	1.85	5.50
A 38	1.75	35.2	5.8	4.2	2.5	36.0	1.85	5.82
A 39	1.75	36.0	5.9	4.3	2.5	37.0	1.85	6.10
A 40	1.75	36.5	6.0	4.4	2.5	37.5	1.85	6.30
A 41	1.75	37.5	6.2	4.5	2.5	38.5	1.85	6.45
A 42	1.75	38.5	6.5	4.5	2.5	39.5	1.85	6.65
A 44	1.75	40.5	6.6	4.6	2.5	41.5	1.85	7.20

d ₁	S h11	d ₃	a max.	b	d ₅ min.	d ₂	Groove Width min.	Weight kg/1000
A 45	1.75	41.5	6.7	4.7	2.5	42.5	1.85	7.65
A 46	1.75	42.5	6.7	4.8	2.5	43.5	1.85	7.80
A 47	1.75	43.5	6.8	4.9	2.5	44.5	1.85	7.90
A 48	1.75	44.5	6.9	5.0	2.5	45.5	1.85	
A 50	2.00	45.8	6.9	5.1	2.5	47.0	2.15	10.20
A 52	2.00	47.8	7.0	5.2	2.5	49.5	2.15	11.10
A 54	2.00	49.8	7.1	5.3	2.5	51.0	2.15	11.50
A 55	2.00	50.8	7.2	5.4	2.5	52.0	2.15	11.80
A 56	2.00	51.8	7.3	5.5	2.5	53.0	2.15	
A 57	2.00	52.8	7.3	5.5	2.5	54.0	2.15	12.25
A 58	2.00	53.8	7.3	5.6	2.5	55.0	2.15	12.60
A 60	2.00	55.8	7.4	5.8	2.5	57.0	2.15	12.90
A 62	2.00	57.8	7.5	6.0	2.5	59.0	2.15	14.30
A 63	2.00	58.8	7.6	6.2	2.5	60.0	2.15	15.90
A 65	2.50	60.8	7.8	6.3	3	62.0	2.65	18.20
A 67	2.50	62.5	7.9	6.4	3	64.0	2.65	20.30
A 68	2.50	63.5	8.0	6.5	3	65.0	2.65	21.80
A 70	2.50	65.5	8.1	6.6	3	67.0	2.65	22.10
A 72	2.50	67.5	8.2	6.8	3	69.0	2.65	22.50
A 75	2.50	70.5	8.4	7.0	3	72.0	2.65	24.60
A 77	2.50	72.5	8.5	7.2	3	74.0	2.65	25.30
A 78	2.50	73.5	8.6	7.3	3	75.0	2.65	26.20
A 80	2.50	74.5	8.6	7.4	3	76.5	2.65	27.30
A 82	2.50	76.5	8.7	7.6	3	78.5	2.65	31.20
A 85	3.00	79.5	8.7	7.8	3.5	81.5	3.15	36.40
A 87	3.00	81.5	8.8	7.9	3.5	83.5	3.15	39.70
A 88	3.00	82.5	8.8	8.0	3.5	84.5	3.15	41.20
A 90	3.00	84.5	8.8	8.2	3.5	86.5	3.15	44.50
A 92	3.00	86.5	9.0	8.4	3.5	88.5	3.15	47.10
A 95	3.00	89.5	9.4	8.6	3.5	91.5	3.15	49.00
A 97	3.00	91.5	9.4	8.8	3.5	93.5	3.15	51.30
A 98	3.00	92.5	9.5	9.0	3.5	94.5	3.15	52.10
A 99	3.00	93.5	9.5	9.1	3.5	95.5	3.15	53.70
A 100	3.00	94.5	9.6	9.2	3.5	96.5	3.15	57.80
A 102	4.00	95.0	9.7	9.2	3.5	98.0	4.15	80.0
A 105	4.00	98.0	9.9	9.3	3.5	101.0	4.15	81.2
A 107	4.00	100.0	10.0	9.5	3.5	103.0	4.15	81.9
A 108	4.00	101.0	10.0	9.5	3.5	104.0	4.15	82.5
A 110	4.00	103.0	10.1	9.6	3.5	106.0	4.15	83.4
A 112	4.00	105.0	10.3	9.7	3.5	108.0	4.15	
A 115	4.00	108.0	10.6	9.8	3.5	111.0	4.15	84.7
A 117	4.00	110.0	10.8	10.0	3.5	113.0	4.15	85.2
								85.8

ISO/ DIN No.	C %	Si %	Mn %	P ≤%	S ≤%	Cr %	Mo %	Ni %
C60 (Nr.1.0601)	0.57-0.65	≤0.40	0.60-0.90	0.045	0.045	≤0.40	≤0.10	≤0.40
C75 (Nr.1.0605)	0.70-0.80	0.15-0.35	0.60-0.80	0.045	0.045	-	-	-

External Retaining Rings (A) DIN 471



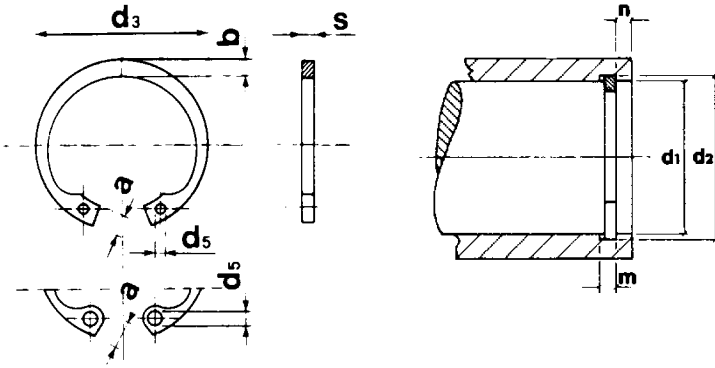
d_1 up thru $\varnothing 27$ = C60-DIN 17222
 d_1 $\varnothing 28$ and above = C75 DIN 17222
 d_1 up thru $\varnothing 48$ = 47- 54 HRC hardness
 d_1 $\varnothing 50$ and above = 44 - 51 HRC hardness

d_1	S h11	d_3	a max.	b	d_5 min.	d_2	Groove Width min.	Weight kg/1000
A 118	4.00	111.0	10.9	10.1	3.5	114.0	4.15	86.3
A 120	4.00	113.0	11.0	10.2	3.5	116.0	4.15	88.1
A 122	4.00	115.0	11.2	10.3	4	118.0	4.15	
A 125	4.00	118.0	11.4	10.4	4	121.0	4.15	90
A 127	4.00	120.0	11.4	10.5	4	123.0	4.15	94
A 128	4.00	121.0	11.5	10.6	4	124.0	4.15	96
A 128	4.00	121.0	11.5	10.6	4	124.0	4.15	100
A 130	4.00	123.0	11.6	10.7	4	126.0	4.15	102
A 132	4.00	125.0	11.7	10.8	4	128.0	4.15	
A 135	4.00	128.0	11.8	11.0	4	131.0	4.15	104
A 137	4.00	130.0	11.9	11.0	4	133.0	4.15	106
A 138	4.00	131.0	11.9	11.1	4	134.0	4.15	107
A 138	4.00	131.0	11.9	11.1	4	134.0	4.15	110
A 140	4.00	133.0	12.0	11.2	4	136.0	4.15	112
A 142	4.00	135.0	12.1	11.3	4	138.0	4.15	
A 145	4.00	138.0	12.2	11.5	4	141.0	4.15	115
A 147	4.00	140.0	12.3	11.6	4	143.0	4.15	117
A 148	4.00	141.0	12.4	11.7	4	144.0	4.15	118
A 148	4.00	141.0	12.4	11.7	4	144.0	4.15	120
A 150	4.00	142.0	13.0	11.8	4	145.0	4.15	125
A 155	4.00	146.0	13.0	12.0	4	150.0	4.15	135
A 160	4.00	151.0	13.3	12.2	4	155.0	4.15	150
A 165	4.00	155.5	13.5	12.5	4	160.0	4.15	160
A 170	4.00	160.5	13.5	12.9	4	165.0	4.15	170
A 175	4.00	165.5	13.5	12.9	4	170.0	4.15	180
A 180	4.00	170.5	14.2	13.5	4	175.0	4.15	190
A 185	4.00	175.5	14.2	13.5	4	180.0	4.15	200
A 190	4.00	180.5	14.2	14.0	4	185.0	4.15	210
A 190	4.00	180.5	14.2	14.0	4	185.0	4.15	220
A 195	4.00	185.5	14.2	14.0	4	190.0	4.15	230
A 200	4.00	190.5	14.2	14.0	4	195.0	4.15	248
A 210	5.00	198.0	14.2	14.0	4	204.0	5.15	
A 215	5.00	203.0	14.2	14.0	4	209.0	5.15	255
A 220	5.00	208.0	14.2	14.0	4	214.0	5.15	265
A 230	5.00	218.0	14.2	14.0	4	224.0	5.15	290
A 230	5.00	218.0	14.2	14.0	4	224.0	5.15	310
A 240	5.00	228.0	14.2	14.0	4	234.0	5.15	335
A 250	5.00	238.0	14.2	14.0	4	244.0	5.15	
A 255	5.00	240.0	16.2	16.0	5	247.0	5.15	345
A 260	5.00	245.0	16.2	16.0	5	252.0	5.15	355
A 270	5.00	255.0	16.2	16.0	5	262.0	5.15	375
A 280	5.00	265.0	16.2	16.0	5	272.0	5.15	398
A 280	5.00	265.0	16.2	16.0	5	272.0	5.15	418
A 290	5.00	275.0	16.2	16.0	5	282.0	5.15	
A 300	5.00	285.0	16.2	16.0	5	292.0	5.15	440
A 320	6.00	303.0		20.0	5			770
A 320	6.00	303.0		20.0	5			800
A 330	6.00	313.0		20.0	6			840

d_1	S h11	d_3	a max.	b	d_5 min.	d_2	Groove Width min.	Weight kg/1000
A 340	6.00	323.0	20.0	6				880
A 360	6.00	343.0	20.0	6				
A 380	6.00	363.0	20.0	6				930
A 460	7.00	440.0	26.0	6				1600
A 480	7.00	460.0	26.0	6				1660
A 480	7.00	460.0	26.0	6				1725
A 490	7.00	470.0	26.0	6				1790
A 500	7.00	480.0	26.0	6				

ISO/ DIN No. Heat-treatable Steel	C %	Si %	Mn %	P ≤%	S ≤%	Cr %	Mo %	Ni %
C60 (Nr.1.0601)	0.57-0.65	≤0.40	0.60-0.90	0.045	0.045	≤0.40	≤0.10	≤0.40
C75 (Nr.1.0605)	0.70-0.80	0.15-0.35	0.60-0.80	0.045	0.045	-	-	-

Internal Retaining Rings (J) DIN 471



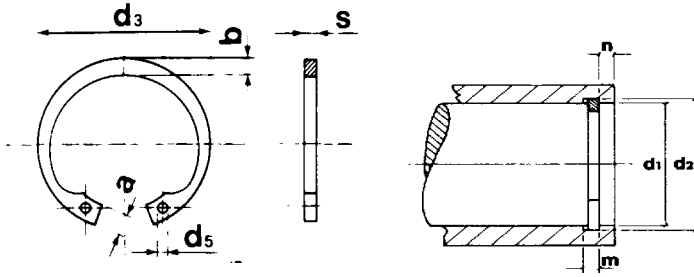
d_1 up thru $\varnothing 33$ = C60-DIN 17222
 d_1 $\varnothing 34$ and above = C75-DIN 17222
 d_1 up thru $\varnothing 49$ = 47- 54 HRC hardness
 d_1 $\varnothing 50$ and above = 44 - 51 HRC hardness

d_1	S h11	d_3	a max.	b	d_5 min.	d_2	Groove Width min.	Weight kg/1000
J 8	0.8	8.7	2.4	1.1	1	8.4	0.09	0.135
J 9	0.8	9.8	2.5	1.3	1	9.4	0.09	0.146
J 10	1	10.8	3.2	1.4	1.2	10.4	1.10	0.272
J 11	1	11.8	3.3	1.5	1.2	11.4	1.10	0.298
J 12	1	13.0	3.4	1.7	1.5	12.5	1.10	0.333
J 13	1	14.1	3.6	1.8	1.5	13.6	1.10	0.360
J 14	1	15.1	3.7	1.9	1.7	14.6	1.10	0.450
J 15	1	16.2	3.7	2.0	1.7	15.7	1.10	0.481
J 16	1	17.3	3.8	2.0	1.7	16.8	1.10	0.521
J 17	1	18.3	3.9	2.1	1.7	17.8	1.10	0.60
J 18	1	19.5	4.1	2.2	2	19.0	1.10	0.67
J 19	1	20.5	4.1	2.2	2	20.0	1.10	0.71
J 20	1	21.5	4.2	2.3	2	21.0	1.10	0.76
J 21	1	22.5	4.2	2.4	2	22.0	1.10	0.86
J 22	1	23.5	4.2	2.5	2	23.0	1.10	0.94
J 23	1.2	24.6	4.2	2.5	2	24.1	1.30	1.20
J 24	1.2	25.9	4.4	2.6	2	25.2	1.30	1.32
J 25	1.2	26.9	4.5	2.7	2	26.2	1.30	1.36
J 26	1.2	27.9	4.7	2.8	2	27.2	1.30	1.47
J 27	1.2	29.1	4.7	2.9	2	28.4	1.30	1.57
J 28	1.2	30.1	4.8	2.9	2	29.4	1.30	1.62
J 29	1.2	31.1	4.8	3.0	2	30.4	1.30	1.67
J 30	1.2	32.1	4.8	3.0	2	31.4	1.30	1.85
J 31	1.2	33.4	5.2	3.2	2.5	32.7	1.30	1.95
J 32	1.2	34.4	5.4	3.2	2.5	33.7	1.30	2.10
J 33	1.2	35.5	5.4	3.3	2.5	34.7	1.60	2.20
J 34	1.5	36.5	5.4	3.3	2.5	35.7	1.60	2.91
J 35	1.5	37.8	5.4	3.4	2.5	37.0	1.60	3.02
J 36	1.5	38.8	5.4	3.5	2.5	38.0	1.60	3.10
J 37	1.5	39.8	5.5	3.6	2.5	39.0	1.60	3.34
J 38	1.5	40.8	5.5	3.7	2.5	40.0	1.60	3.50
J 39	1.5	42.5	5.6	3.8	2.5	41.0	1.85	3.90
J 40	1.75	43.5	5.8	3.9	2.5	42.5	1.85	4.70
J 41	1.75	44.5	5.9	4.0	2.5	43.5	1.85	5.15
J 42	1.75	45.5	5.9	4.1	2.5	44.5	1.85	5.40
J 43	1.75	46.5	5.9	4.2	2.5	45.5	1.85	5.60
J 44	1.75	47.5	6.0	4.2	2.5	46.5	1.85	5.80
J 45	1.75	48.5	6.2	4.3	2.5	47.5	1.85	6.00
J 46	1.75	49.5	6.3	4.4	2.5	48.5	1.85	6.10
J 47	1.75	50.5	6.4	4.4	2.5	49.5	1.85	6.20
J 48	1.75	51.5	6.4	4.5	2.5	50.5	1.85	6.70
J 49	1.75	52.5	6.5	4.5	2.5			6.90

d_1	S h11	d_3	a max.	b	d_5 min.	d_2	Groove Width min.	Weight kg/1000
J 50	2	54.2	6.5	4.6	2.5	53.0	2.15	7.80
J 51	2	55.2	6.5	4.7	2.5	54.0	2.15	8.05
J 52	2	56.2	6.7	4.7	2.5	55.0	2.15	8.40
J 53	2	57.2	6.7	4.9	2.5	56.0	2.15	8.60
J 54	2	58.2	6.7	5.0	2.5	57.0	2.15	8.75
J 55	2	59.2	6.8	5.0	2.5	58.0	2.15	9.10
J 56	2	60.2	6.8	5.1	2.5	59.0	2.15	9.65
J 57	2	61.2	6.8	5.1	2.5	60.0	2.15	10.20
J 58	2	62.2	6.9	5.2	2.5	61.0	2.15	10.50
J 60	2	64.2	7.3	5.4	2.5	63.0	2.15	11.10
J 62	2	66.2	7.3	5.5	2.5	65.0	2.15	11.25
J 63	2	67.2	7.3	5.6	2.5	66.0	2.15	11.70
J 64	2	68.2	7.6	5.8	2.5			14.30
J 65	2.5	69.2	7.6	5.8	3	68.0	2.65	14.30
J 67	2.5	71.5	7.7	6.0	3	70.0	2.65	15.35
J 68	2.5	72.5	7.8	6.1	3	71.0	2.65	16.00
J 70	2.5	74.5	7.8	6.2	3	73.0	2.65	16.60
J 72	2.5	76.5	7.8	6.4	3	75.0	2.65	18.10
J 75	2.5	79.5	7.8	6.6	3	78.0	2.65	18.80
J 77	2.5	81.5	7.9	6.7	3	80.0	2.65	19.60
J 78	2.5	82.5	8.5	6.8	3	81.0	2.65	20.40
J 80	2.5	85.5	8.5	7.0	3	83.5	2.65	22.00
J 82	2.5	87.5	8.5	7.0	3	85.5	2.65	24.00
J 85	3	90.5	8.6	7.2	3.5	88.5	3.15	25.30
J 87	3	92.5	8.6	7.3	3.5	90.5	3.15	27.10
J 88	3	93.5	8.6	7.4	3.5	91.5	3.15	28.00
J 90	3	95.5	8.6	7.6	3.5	93.5	3.15	31.00
J 92	3	97.5	8.7	7.8	3.5	95.5	3.15	32.00
J 95	3	100.5	8.8	8.1	3.5	98.5	3.15	35.00
J 97	3	102.5	8.8	8.2	3.5	100.5	3.15	36.00
J 98	3	103.5	9.0	8.3	3.5	101.5	3.15	37.00
J 100	3	105.5	9.2	8.4	3.5	103.5	3.15	38.00
J 102	4	108.0	9.5	8.5	3.5	106.0	4.15	55.00
J 105	4	112.0	9.5	8.7	3.5	109.0	4.15	56.00
J 107	4	114.0	9.5	8.8	3.5	111.0	4.15	58.50
J 108	4	115.0	9.5	8.9	3.5	112.0	4.15	60.00
J 110	4	117.0	10.4	9.0	3.5	114.0	4.15	64.50
J 112	4	119.0	10.5	9.1	3.5	116.0	4.15	72.00
J 115	4	122.0	10.5	9.3	3.5	119.0	4.15	74.50
J 117	4	124.0	10.6	9.5	3.5	121.0	4.15	76.00
J 118	4	125.0	10.7	9.6	3.5	122.0	4.15	76.50
J 120	4	127.0	11.0	9.7	3.5	124.0	4.15	77.50

ISO/ DIN No. Heat-treatable Steel	C %	Si %	Mn %	P ≤%	S ≤%	Cr %	Mo %	Ni %
C60 (Nr.1.0601)	0.57-0.65	≤0.40	0.60-0.90	0.045	0.045	≤0.40	≤0.10	≤0.40
C75 (Nr.1.0605)	0.70-0.80	0.15-0.35	0.60-0.80	0.045	0.045	-	-	-

Internal Retaining Rings (J) DIN 471



d_1 up thru $\varnothing 33$ = C60-DIN 17222
 d_1 $\varnothing 34$ and above = C75-DIN 17222
 d_1 up thru $\varnothing 49$ = 47- 54 HRC hardness
 d_1 $\varnothing 50$ and above = 44 - 51 HRC hardness

d_1	S h11	d_3	a max.	b	d_5 min.	d_2	Groove Width min.	Weight kg/1000
J 122	4	129.0	11.0	9.8	4	126.0	4.15	78.50
J 125	4	132.0	11.0	10.0	4	129.0	4.15	79.50
J 127	4	134.0	11.0	10.1	4	131.0	4.15	80.50
J 128	4	135.0	11.0	10.2	4	132.0	4.15	81.00
J 130	4	137.0	11.0	10.2	4	134.0	4.15	82.00
J 132	4	139.0	11.0	10.3	4	136.0	4.15	83.00
J 135	4	142.0	11.2	10.5	4	139.0	4.15	84.00
J 137	4	144.0	11.2	10.5	4	141.0	4.15	85.50
J 138	4	145.0	11.2	10.6	4	142.0	4.15	86.00
J 140	4	147.0	11.2	10.7	4	144.0	4.15	87.50
J 142	4	149.0	11.3	10.8	4	146.0	4.15	91.00
J 145	4	152.0	11.4	10.9	4	149.0	4.15	93.00
J 147	4	154.0	11.6	11.0	4	151.0	4.15	96.00
J 148	4	155.0	11.8	11.1	4	152.0	4.15	97.00
J 150	4	158.0	12.0	11.2	4	155.0	4.15	99.00
J 152	4	161.0	12.0	11.4	4	157.0	4.15	103.0
J 155	4	164.0	12.0	11.4	4	160.0	4.15	105.0
J 158	4	167.0	13.0	11.6	4	163.0	4.15	108.0
J 160	4	169.0	13.0	11.6	4	165.0	4.15	110.0
J 165	4	174.5	13.0	11.8	4	170.0	4.15	125.0
J 168	4	177.5	13.5	12.2	4	173.0	4.15	130.0
J 170	4	179.5	13.5	12.2	4	175.0	4.15	140.0
J 175	4	184.5	13.5	12.7	4	180.0	4.15	150.0
J 178	4	187.5	14.2	13.2	4	183.0	4.15	160.0
J 180	4	189.5	14.2	13.2	4	185.0	4.15	165.0
J 185	4	194.5	14.2	13.7	4	190.0	4.15	170.0
J 190	4	199.5	14.2	13.8	4	195.0	4.15	175.0
J 195	4	204.5	14.2	13.8	4	200.0	4.15	183
J 200	4	209.5	14.2	14.0	4	205.0	4.15	195
J 205	5	217.0	14.2	14.0	4	211.0	5.15	225
J 210	5	222.0	14.2	14.0	4	216.0	5.15	270
J 215	5	227.0	14.2	14.0	4	221.0	5.15	300
J 220	5	232.0	14.2	14.0	4	226.0	5.15	315
J 225	5	237.0	14.2	14.0	4	231.0	5.15	323
J 230	5	242.0	14.2	14.0	4	236.0	5.15	330
J 235	5	247.0	14.2	14.0	4			338
J 240	5	252.0	14.2	14.0	4	246.0	5.15	345
J 245	5	257.0	14.2	14.0	4	251.0	5.15	353
J 250	5	262.0	14.2	14.0	4	256.0	5.15	360
J 255	5	270.0	16.2	16.0	5			368
J 260	5	275.0	16.2	16.0	5	268.0	5.15	375

d_1	S h11	d_3	a max.	b	d_5 min.	d_2	Groove Width min.	Weight kg/1000
J 265	5	280.0	16.2	16.0	5			
J 270	5	285.0	16.2	16.0	5	278.0	5.15	
J 275	5	290.0	16.2	16.0	5	283.0	5.15	
J 280	5	295.0	16.2	16.0	5	288.0	5.15	
J 285	5	300.0	16.2	16.0	5			
J 290	5	305.0	16.2	16.0	5			
J 300	5	315.0	16.2	16.0	5	308.0	5.15	
J 305	6	322.0		20.0	6			
J 310	6	327.0		20.0	6			
J 320	6	337.0		20.0	6			
J 330	6	347.0		20.0	6			
J 340	6	357.0		20.0	6			
J 350	6	367.0		20.0	6			
J 360	6	377.0		20.0	6			
J 380	6	397.0		20.0	6			
J 390	6	407.0		20.0	6			
J 400	6	417.0		20.0	6			
J 420	7	440.0		26.0	6			
J 430	7	450.0		26.0	6			
J 440	7	460.0		26.0	6			
J 450	7	470.0		26.0	6			
J 460	7	480.0		26.0	6			
J 470	7	490.0		26.0	6			
J 480	7	500.0		26.0	6			
J 500	7	520.0		26.0	6			

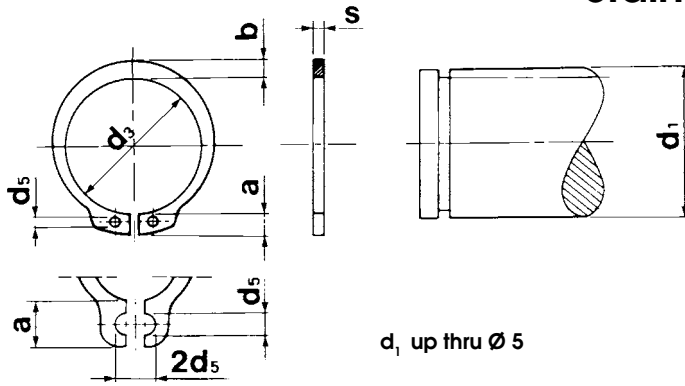
ISO/ DIN No. Heat-treatable Steel	C %	Si %	Mn %	P ≤%	S ≤%	Cr %	Mo %	Ni %
C60 (Nr.1.0601)	0.57-0.65	≤0.40	0.60-0.90	0.045	0.045	≤0.40	≤0.10	≤0.40
C75 (Nr.1.0605)	0.70-0.80	0.15-0.35	0.60-0.80	0.045	0.045	-	-	-



American Metric® Corporation

External Retaining Rings (A) DIN 471

Stainless Steel



d₁ up thru Ø 27 = DIN X 45 CrMoV 15
 d₁ Ø 28 and above = DIN X 35 CrMo 17
 (~ AISI 420)
 d₁ up thru Ø 48 = 47- 54 HRC hardness
 d₁ Ø 50 and above = 44 - 51 HRC hardness

d₁ up thru Ø 5

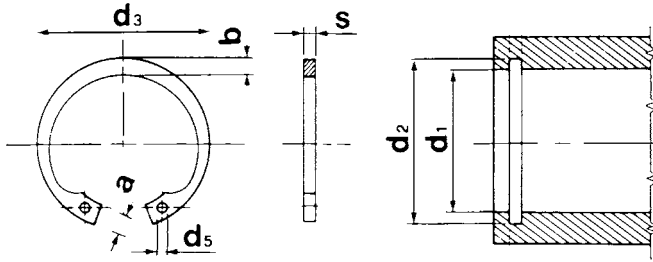
d ₁	S h11	d ₃	a max	b	d ₅ min.	Weight kg/1000
4	0.4	3.7	2.2	0.9	1	0.034
5	0.6	4.7	2.5	1.1	1	0.081
6	0.7	5.6	2.7	1.3	1.2	0.121
7	0.8	6.5	3.1	1.4	1.2	0.189
8	0.8	7.4	3.2	1.5	1.2	0.220
9	1	8.4	3.3	1.7	1.2	0.368
10	1	9.3	3.3	1.8	1.5	0.402
11	1	10.2	3.3	1.8	1.5	0.445
12	1	11.0	3.3	1.8	1.7	0.469
13	1	11.9	3.4	2.0	1.7	0.571
14	1	12.9	3.5	2.1	1.7	0.644
15	1	13.8	3.6	2.2	1.7	0.704
16	1	14.7	3.7	2.2	1.7	0.771
17	1	15.7	3.8	2.3	1.7	0.881
18	1.2	16.5	3.9	2.4	2	1.154
19	1.2	17.5	3.9	2.5	2	1.230
20	1.2	18.5	4.0	2.6	2	1.321
21	1.2	19.5	4.1	2.7	2	1.450
22	1.2	20.5	4.2	2.8	2	1.599
23	1.2	21.5	4.3	2.9	2	1.724
24	1.2	22.2	4.4	3.0	2	1.776
25	1.2	23.2	4.4	3.0	2	1.907
26	1.2	24.2	4.5	3.1	2	1.980
27	1.2	24.9	4.6	3.1	2	2.149
28	1.5	25.9	4.7	3.2	2	2.781
29	1.5	26.9	4.8	3.4	2	3.027
30	1.5	27.9	5.0	3.5	2	3.335
31	1.5	28.6	5.0	3.5	2.5	3.228
32	1.5	29.6	5.2	3.6	2.5	3.430
33	1.5	30.5	5.2	3.7	2.5	3.917
34	1.5	31.5	5.4	3.8	2.5	4.086
35	1.5	32.2	5.6	3.9	2.5	4.329
36	1.75	33.2	5.6	4.0	2.5	4.860
37	1.75	34.2	5.7	4.1	2.5	5.300
38	1.75	35.2	5.8	4.2	2.5	5.360
39	1.75	36.0	5.9	4.3	2.5	5.650
40	1.75	36.5	6.0	4.4	2.5	5.420
41	1.75	37.5	6.2	4.5	2.5	6.550
42	1.75	38.5	6.5	4.5	2.5	6.620
44	1.75	40.5	6.6	4.6	2.5	6.820
45	1.75	41.5	6.7	4.7	2.5	7.100
46	1.75	42.5	6.7	4.8	2.5	7.290

d ₁	S h11	d ₃	a max	b	d ₅ min.	Weight kg/1000
47	1.75	43.5	6.8	4.9	2.5	7.690
48	2	44.5	6.9	5.0	2.5	7.960
50	2	45.8	6.9	5.1	2.5	9.750
52	2	47.8	7.0	5.2	2.5	10.100
54	2	49.8	7.1	5.3	2.5	10.700
55	2	50.8	7.2	5.4	2.5	10.900
56	2	51.8	7.3	5.5	2.5	11.280
57	2	52.8	7.3	5.5	2.5	11.800
58	2	53.8	7.3	5.6	2.5	12.090
60	2	55.8	7.4	5.8	2.5	12.570
62	2	57.8	7.5	6.0	2.5	14.030
63	2.5	58.8	7.6	6.2	2.5	14.850
65	2.5	60.8	7.8	6.3	3	19.310
67	2.5	62.5	7.9	6.4	3	20.900
68	2.5	63.5	8.0	6.5	3	21.010
70	2.5	65.5	8.1	6.6	3	21.730
72	2.5	67.5	8.2	6.8	3	23.490
75	2.5	70.5	8.4	7.0	3	24.770
77	2.5	72.5	8.5	7.2	3	25.800
78	2.5	73.5	8.6	7.3	3	26.900
80	2.5	74.5	8.6	7.4	3	27.120
82	3	76.5	8.7	7.6	3	27.430
85	3	79.5	8.7	7.8	3.5	37.300
87	3	81.5	8.8	7.9	3.5	39.000
88	3	82.5	8.8	8.0	3.5	39.600
90	3	84.5	8.8	8.2	3.5	39.890
92	3	86.5	9.0	8.4	3.5	43.800
95	3	89.5	9.4	8.6	3.5	45.000
97	3	91.5	9.4	8.8	3.5	52.310
98	3	92.5	9.5	9.0	3.5	48.950
100	3	94.5	9.6	9.0	3.5	49.720

DIN No. Stainless Steel	C %	Si ≤%	Mn ≤%	P ≤%	S ≤%	Cr %	Mo %	Ni %	V %
X 45 CrMoV 15	0.42-0.50	1.00	1.00	0.045	0.030	13.8-15.0	0.45-0.60	-	0.10-0.15
X 35 CrMo 17	0.35-0.45	1.00	1.00	0.045	0.030	15.5-17.5	0.80-1.30	≤1.00	-

Internal Retaining Rings (J) DIN 471

Stainless Steel



d₁ up thru Ø 33 = DIN X 45 CrMoV 15
 d₁ Ø 34 and above = DIN X 35 CrMo 17
 (~ AISI 420)
 d₁ up thru Ø 49 = 47 - 54 HRC hardness
 d₁ Ø 50 and above = 44 - 51 HRC hardness

d ₁	S h11	d ₃	a max	b	d ₅ min.	Weight kg/1000
8	0.8	8.7	2.4	1.1	1	0.116
9	0.8	9.8	2.5	1.3	1	0.146
10	1	10.8	3.2	1.4	1.2	0.261
11	1	11.8	3.3	1.5	1.2	0.289
12	1	13.0	3.4	1.7	1.5	0.309
13	1	14.1	3.6	1.8	1.5	0.363
14	1	15.1	3.7	1.9	1.7	0.421
15	1	16.2	3.7	2.0	1.7	0.481
16	1	17.3	3.8	2.0	1.7	0.510
17	1	18.3	3.9	2.1	1.7	0.568
18	1	19.5	4.1	2.2	2	0.648
19	1	20.5	4.1	2.2	2	0.682
20	1	21.5	4.2	2.3	2	0.743
21	1	22.5	4.2	2.4	2	0.803
22	1	23.5	4.2	2.5	2	0.875
23	1.2	24.6	4.2	2.5	2	1.140
24	1.2	25.9	4.4	2.6	2	1.270
25	1.2	26.9	4.5	2.7	2	1.320
26	1.2	27.9	4.7	2.8	2	1.440
27	1.2	29.1	4.7	2.9	2	1.530
28	1.2	30.1	4.8	2.9	2	1.600
29	1.2	31.1	4.8	3.0	2	1.700
30	1.2	32.1	4.8	3.0	2	1.820
31	1.2	33.4	5.2	3.2	2.5	1.973
32	1.2	34.4	5.4	3.2	2.5	2.070
33	1.2	35.5	5.4	3.3	2.5	2.240
34	1.5	36.5	5.4	3.3	2.5	2.870
35	1.5	37.8	5.4	3.4	2.5	2.970
36	1.5	38.8	5.4	3.5	2.5	3.110
37	1.5	39.8	5.5	3.6	2.5	3.250
38	1.5	40.8	5.5	3.7	2.5	3.520
39	1.5	42.5	5.6	3.8	2.5	3.810
40	1.75	43.5	5.8	3.9	2.5	4.580
41	1.75	44.5	5.9	4.0	2.5	5.080
42	1.75	45.5	5.9	4.1	2.5	5.260
43	1.75	46.5	5.9	4.2	2.5	5.480
44	1.75	47.5	6.0	4.2	2.5	5.560
45	1.75	48.5	6.2	4.3	2.5	5.860
46	1.75	49.5	6.3	4.4	2.5	6.100
47	1.75	50.5	6.4	4.4	2.5	6.740
48	1.75	51.5	6.4	4.5	2.5	6.530
49	1.75	52.5	6.5	4.5	2.5	7.050

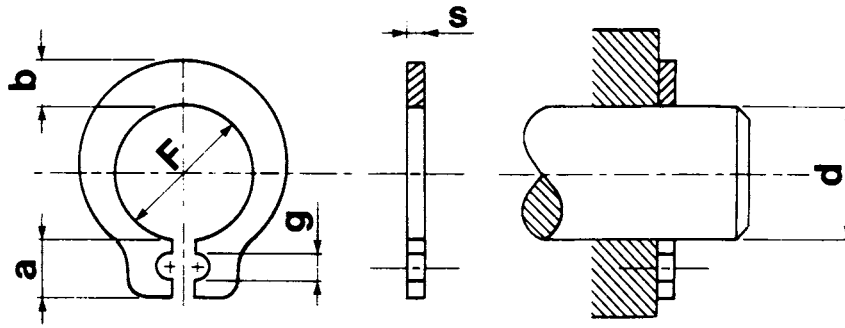
d ₁	S h11	d ₃	a max	b	d ₅ min.	Weight kg/1000
50	2	54.2	6.5	4.6	2.5	8.370
51	2	55.2	6.5	4.7	2.5	8.600
52	2	56.2	6.7	4.7	2.5	8.340
53	2	57.2	6.7	4.9	2.5	9.380
54	2	58.2	6.7	5.0	2.5	9.420
55	2	59.2	6.8	5.0	2.5	9.560
56	2	60.2	6.8	5.1	2.5	10.000
57	2	61.2	6.8	5.1	2.5	10.170
58	2	62.2	6.9	5.2	2.5	10.680
60	2	64.2	7.3	5.4	2.5	10.820
62	2	66.2	7.3	5.5	2.5	11.190
63	2	67.2	7.3	5.6	2.5	11.690
65	2.5	69.2	7.6	5.8	3	16.100
67	2.5	71.5	7.7	6.0	3	17.340
68	2.5	72.5	7.8	6.1	3	17.920
70	2.5	74.5	7.8	6.2	3	18.640
72	2.5	76.5	7.8	6.4	3	19.000
75	2.5	79.5	7.8	6.6	3	21.150
77	2.5	81.5	7.9	6.7	3	22.750
78	2.5	82.5	8.5	6.8	3	23.040
80	2.5	85.5	8.5	7.0	3	24.310
82	2.5	87.5	8.5	7.0	3	24.900
85	3	90.5	8.6	7.2	3.5	31.900
87	3	92.5	8.6	7.3	3.5	34.000
88	3	93.5	8.6	7.4	3.5	35.120
90	3	95.5	8.6	7.6	3.5	35.420
92	3	97.5	8.7	7.8	3.5	38.170
95	3	100.5	8.8	8.1	3.5	40.450
97	3	102.5	8.8	8.2	3.5	40.320
98	3	103.5	9.0	8.3	3.5	40.800
100	3	105.5	9.2	8.4	3.5	43.150

DIN No. Stainless Steel	C %	Si ≤%	Mn ≤%	P ≤%	S ≤%	Cr %	Mo %	Ni %	V %
X 45 CrMoV 15	0.42-0.50	1.00	1.00	0.045	0.030	13.8-15.0	0.45-0.60	-	0.10-0.15
X 35 CrMo 17	0.35-0.45	1.00	1.00	0.045	0.030	15.5-17.5	0.80-1.30	≤1.00	-



American Metric® Corporation

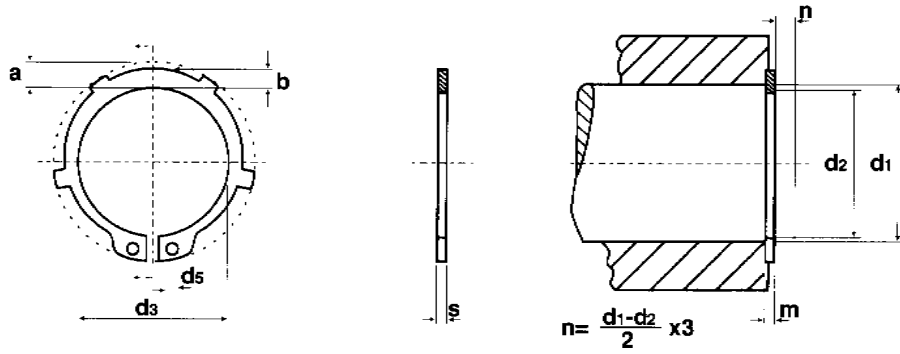
Metric Grip Rings For Shafts Without Grooves



Part No.	For Shaft Ø d mm	F	s	a	b	g min
GR 2	2	1.90	0.5	1.85	1.45	1
GR 2.5	2.5	2.35	0.6	1.90	1.50	1
GR 3	3	2.80	0.6	2	1.60	1.10
GR 4	4	3.80	0.8	2.80	1.80	1.20
GR 5	5	4.75	0.8	2.90	2.20	1.30
GR 6	6	5.70	1	3	2.50	1.40
GR 7	7	6.65	1	3.20	2.80	1.40
GR 8	8	7.65	1	3.40	3	1.50
GR 9	9	8.60	1.20	3.50	3.20	1.70
GR 10	10	9.60	1.20	3.50	3.50	1.70
GR 11	11	10.50	1.20	3.90	3.90	1.70
GR 12	12	11.50	1.30	4.40	4.30	2

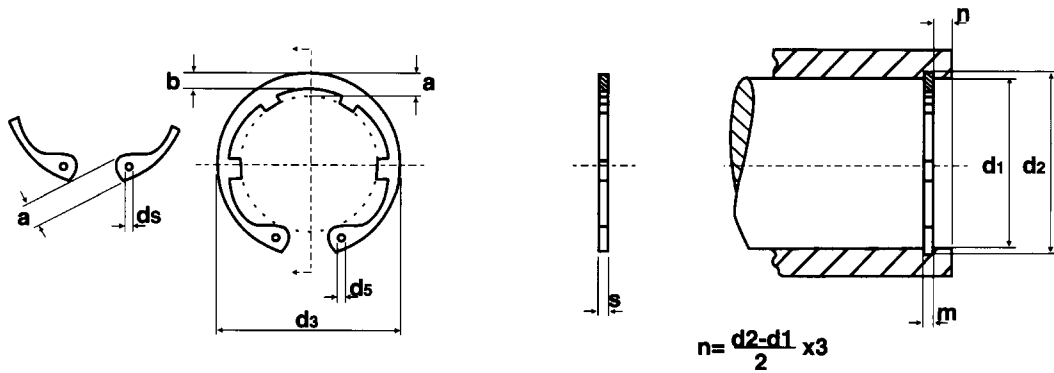
Material
C60-DIN (AISI 1060) HRc 47-54
phosphate finish hardened spring steel

Metric Retaining Rings (DIN 983)



Part No.	d ₁	s	d ₃	a _{max}	b	d ₅ _{min}	Weight kg/ 1000
AK 18	18	1.2	16.5	3.7	2.5	2	1.24
AK 20	20	1.2	18.5	3.8	2.6	2	1.45
AK 22	22	1.2	20.5	4.0	2.8	2	1.77
AK 25	25	1.2	23.2	4.3	3.0	2	2.12
AK 26	26	1.2	24.2	4.4	3.1	2	2.18
AK 30	30	1.5	27.9	4.7	3.4	2	3.65
AK 35	35	1.5	32.2	5.2	3.8	2.5	4.38
AK 40	40	1.75	36.5	7.2	4.2	2.5	7.00
AK 45	45	1.75	41.5	7.2	4.6	2.5	8.50
AK 50	50	2	45.8	8.2	5.0	2.5	11.55
AK 55	55	2	50.8	8.2	5.4	2.5	12.99
AK 65	65	2.5	60.8	10.2	6.2	3	21.70

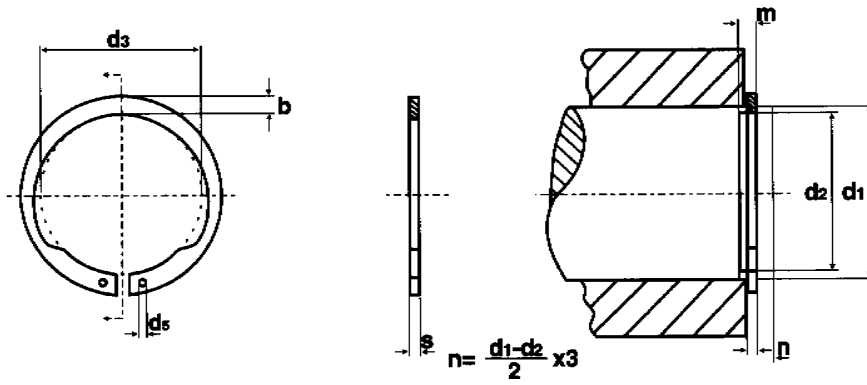
Metric Retaining Rings (DIN 984)



$$n = \frac{d2 - d1}{2} \times 3$$

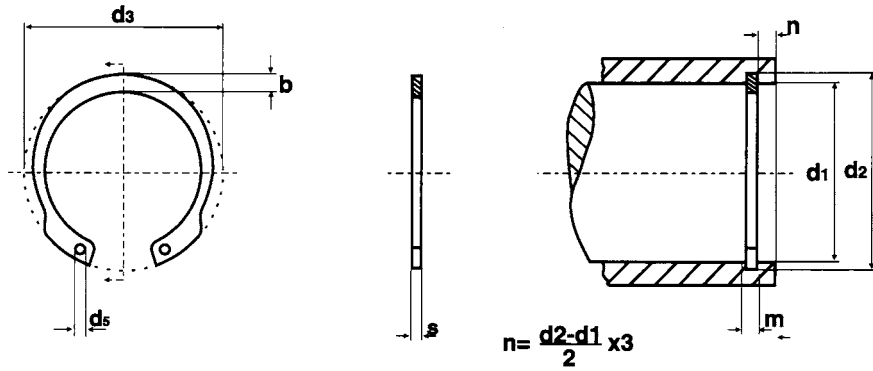
Part No.	d ₁	S	d ₃	a max	b	d ₅ min	Weight kg/ 1000
IK 17	17	1	18.3	3.7	2.2	1.7	0.80
IK 18	18	1	19.5	4.1	2.3	2	0.90
IK 19	19	1	20.5	3.8	2.3	2	0.99
IK 20	20	1	21.5	3.9	2.4	2	1.06
IK 22	22	1	23.5	4.0	2.6	2	1.28
IK 24	24	1.2	25.9	4.2	2.6	2	1.60
IK 26	26	1.2	28.5	4.4	2.8	2	2.00
IK 27	27	1.2	29.1	4.5	2.9	2	2.00
IK 30	30	1.2	32.1	4.9	3.2	2	2.35
IK 32	32	1.2	34.4	5.1	3.3	2.5	2.50
IK 34	34	1.5	36.5	5.3	3.4	2.5	3.80
IK 35	35	1.5	37.8	5.5	3.6	2.5	4.00
IK 36	36	1.5	38.8	5.6	3.6	2.5	4.15
IK 38	38	1.5	40.8	6.1	3.8	2.5	4.40
IK 40	40	1.75	43.5	7.2	4.0	2.5	5.30
IK 42	42	1.75	45.5	7.2	4.1	2.5	6.00
IK 45	45	1.75	48.5	7.2	4.3	2.5	6.60
IK 47	47	1.75	50.5	7.2	4.5	2.5	6.90
IK 50	50	2	54.2	8.2	4.7	2.5	8.50
IK 52	52	2	56.2	8.2	4.7	2.5	9.40
IK 57	57	2	61.2	8.2	5.2	2.5	11.65
IK 75	75	2.5	79.5	10.2	6.6	3	22.60

AV Type Metric Retaining Rings



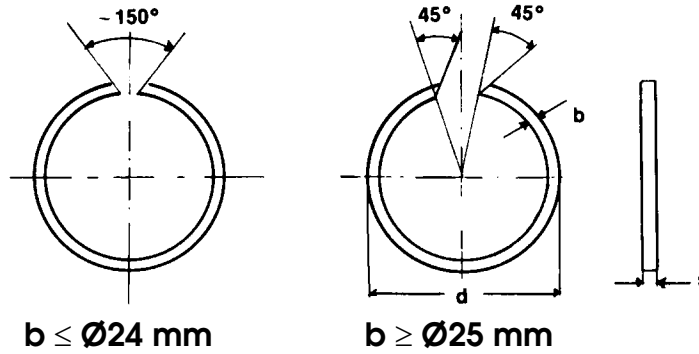
Part No.	d ₁	s	d ₃	b	d ₅ min	Weight kg/ 1000
AV 12	12	1	11.0	1.8	1.3	0.25
AV 13	13	1	11.9	2.1	1.3	0.56
AV 14	14	1	12.9	2.1	1.3	0.58
AV 16	16	1	14.7	2.3	1.3	0.72
AV 17	17	1	15.7	2.4	1.3	0.81
AV 18	18	1.2	16.5	2.6	1.5	1.14
AV 20	20	1.2	18.5	2.8	1.5	1.43
AV 22	22	1.2	20.5	3.0	1.5	1.63
AV 25	25	1.2	23.2	3.4	1.5	2.10
AV 30	30	1.5	27.9	3.9	2.0	3.58
AV 32	32	1.5	29.6	4.0	2.0	3.88
AV 35	35	1.5	32.2	4.2	2.0	4.53
AV 40	40	1.75	36.5	4.7	2.0	6.49
AV 50	50	2	45.8	5.2	2.5	9.84
AV 60	60	2	55.8	5.8	2.5	13.80
AV 65	65	2.5	60.8	6.0	2.5	20.75
AV 75	75	2.5	70.5	6.5	2.5	27.50

IV Type Metric Retaining Rings



Part No.	d ₁	s	d ₃	b	d ₅ min	Weight kg/ 1000
IV 16	16	1	17.3	2.1	1.3	0.53
IV 17	17	1	18.3	2.1	1.3	0.58
IV 19	19	1	20.5	2.2	1.3	0.66
IV 20	20	1	21.5	2.3	1.3	0.80
IV 22	22	1	23.5	2.4	1.3	0.83
IV 24	24	1.2	25.9	2.8	1.5	1.30
IV 25	25	1.2	26.9	2.8	1.5	1.40
IV 26	26	1.2	27.9	3.0	1.5	1.50
IV 27	27	1.2	29.1	3.0	1.5	1.53
IV 28	28	1.2	30.1	3.1	1.5	1.80
IV 30	30	1.2	32.1	3.2	1.5	2.03
IV 32	32	1.2	34.4	3.3	1.5	2.05
IV 33	33	1.2	35.5	3.3	1.5	2.35
IV 35	35	1.5	37.8	3.4	1.7	3.20
IV 36	36	1.5	38.8	3.6	1.7	3.23
IV 38	38	1.5	40.8	3.8	1.7	3.68
IV 40	40	1.75	43.5	4.2	2.0	4.75
IV 42	42	1.75	45.5	4.2	2.0	5.20
IV 45	45	1.75	48.5	4.2	2.0	6.00
IV 47	47	1.75	50.5	4.7	2.0	6.50
IV 50	50	2	54.2	5.2	2.5	8.50
IV 55	55	2	59.2	5.2	2.5	10.00
IV 58	58	2	62.2	5.2	2.5	10.50
IV 60	60	2	64.2	5.2	2.5	11.25
IV 62	62	2	66.2	5.2	2.5	11.75
IV 68	68	2.5	72.5	5.7	2.5	17.75
IV 80	80	2.5	85.5	6.0	2.5	22.90
IV 85	85	3	90.5	6.6	3.0	30.00

Metric Snap Rings

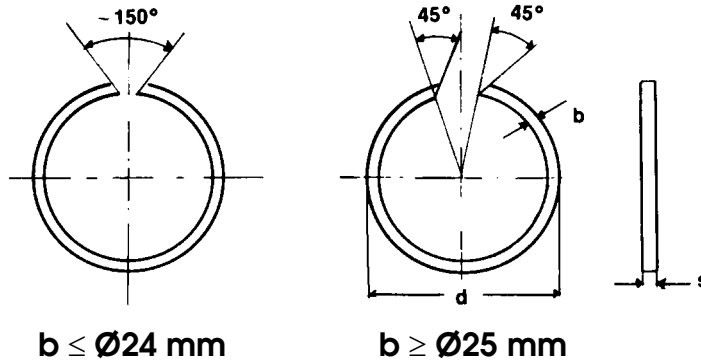


SB Type Snap Ring

Part No.	Shaft Ø mm	s -0.1	b -0.1	d min.	Part No.	Shaft Ø mm	s -0.1	b -0.1	d min.
SB 7*	7	0.8	1.0	7.5	SB 50	50	1.5	2.3	51.8
SB 8*	8	0.8	1.0	8.5	SB 52	52	1.5	2.3	54.3
SB 9*	9	0.8	1.1	9.5	SB 53	53	1.5	2.3	55.3
SB 10*	10	0.8	1.2	10.6	SB 55	55	1.5	2.3	57.3
SB 11*	11	1.0	1.3	11.6	SB 57	57	1.5	2.3	59.3
SB 12*	12	1.0	1.3	12.7	SB 58	58	1.5	2.3	60.3
SB 13*	13	1.0	1.3	13.8	SB 60	60	1.5	2.3	62.3
SB 14*	14	1.0	1.3	14.8	SB 62	62	1.5	2.3	64.3
SB 15*	15	1.0	1.3	15.8	SB 63	63	1.5	2.3	65.3
SB 16	16	1.2	1.6	16.8	SB 65	65	1.5	2.3	67.3
SB 17	17	1.2	1.7	17.8	SB 68	68	1.5	2.3	70.3
SB 18	18	1.2	1.75	18.9	SB 70	70	2.0	2.8	72.3
SB 19	19	1.2	1.75	19.9	SB 72	72	2.0	2.8	74.6
SB 20	20	1.2	1.75	21.0	SB 73	73	2.0	2.8	75.6
SB 21	21	1.2	1.75	22.0	SB 74	74	2.0	2.8	76.6
SB 22	22	1.2	1.75	23.0	SB 76	76	2.0	2.8	78.6
SB 23	23	1.2	1.75	24.0	SB 78	78	2.0	2.8	80.6
SB 24	24	1.2	1.75	25.2	SB 79	79	2.0	2.8	81.6
SB 25	25	1.2	1.75	26.2	SB 80	80	2.0	2.8	82.6
SB 26	26	1.2	1.75	27.2	SB 81	81	2.0	2.8	83.6
SB 27	27	1.2	1.75	28.2	SB 82	82	2.0	2.8	84.6
SB 28	28	1.2	1.75	29.2	SB 83	83	2.0	2.8	85.6
SB 29	29	1.2	1.75	30.2	SB 85	85	2.0	2.8	87.6
SB 30	30	1.5	2.3	31.4	SB 86	86	2.5	3.4	88.6
SB 31	31	1.5	2.3	32.4	SB 88	88	2.5	3.4	91.0
SB 32	32	1.5	2.3	33.4	SB 90	90	2.5	3.4	93.0
SB 33	33	1.5	2.3	34.4	SB 92	92	2.5	3.4	95.0
SB 34	34	1.5	2.3	35.4	SB 93	93	2.5	3.4	96.0
SB 35	35	1.5	2.3	36.4	SB 95	95	2.5	3.4	98.0
SB 37	37	1.5	2.3	38.8	SB 97	97	2.5	3.4	100.0
SB 38	38	1.5	2.3	39.8	SB 98	98	2.5	3.4	101.0
SB 39	39	1.5	2.3	40.8	SB 100	100	2.5	3.4	103.0
SB 40	40	1.5	2.3	41.8	SB 102	102	2.5	3.4	105.3
SB 42	42	1.5	2.3	43.8	SB 103	103	2.5	3.4	106.3
SB 43	43	1.5	2.3	44.8	SB 105	105	2.5	3.4	108.3
SB 44	44	1.5	2.3	45.8	SB 107	107	2.5	3.4	110.3
SB 45	45	1.5	2.3	46.8	SB 108	108	2.5	3.4	111.3
SB 46	46	1.5	2.3	47.8	SB 110	110	2.5	3.4	113.3
SB 47	47	1.5	2.3	48.8	SB 112	112	2.5	3.4	115.3
SB 48	48	1.5	2.3	49.8	SB 113	113	2.5	3.4	116.3

* Items only available by special quote.

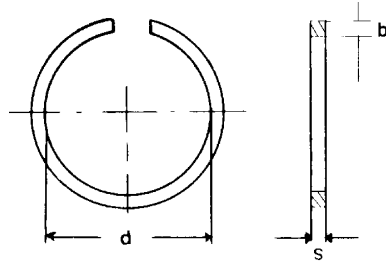
Metric Snap Rings



SB Type Snap Ring

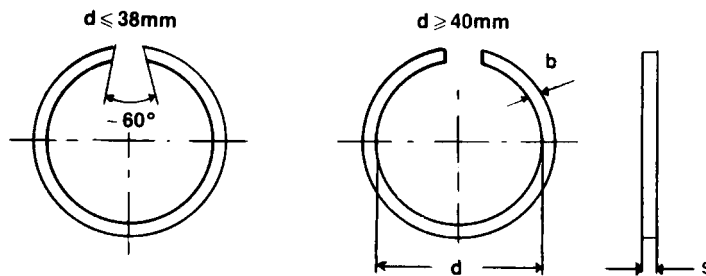
Part No.	Shaft Ø mm	s -0.1	b -0.1	d min.	Part No.	Shaft Ø mm	s -0.1	b -0.1	d min.
SB 115	115	2.5	3.4	118.3	SB 290	290	4.0	7.5	297.0
SB 117	117	2.5	3.4	120.3	SB 300	300	4.0	7.5	307.0
SB 118	118	2.5	3.4	121.3	SB 310	310	4.0	7.5	317.0
SB 120	120	2.5	3.4	123.3	SB 320	320	4.0	7.5	327.0
SB 123	123	2.5	3.4	126.3	SB 325	325	4.0	7.5	332.0
SB 125	125	2.5	3.4	128.3	SB 330	330	4.0	7.5	337.0
SB 127	127	2.5	3.4	130.3	SB 340	340	4.0	7.5	347.0
SB 130	130	2.5	3.4	133.3	SB 350	350	4.0	7.5	357.0
SB 133	133	2.5	3.4	136.3	SB 355	355	4.0	7.5	362.0
SB 135	136	2.5	3.4	138.3	SB 360	360	4.0	7.5	367.0
SB 137	137	2.5	4.0	140.3	SB 370	370	4.0	7.5	377.0
SB 140	140	2.5	4.0	143.6	SB 375	375	4.0	7.5	382.0
SB 143	143	2.5	4.0	146.6	SB 380	380	4.0	7.5	387.0
SB 150	150	2.5	4.0	153.6	SB 390	390	4.0	7.5	397.0
SB 153	153	2.5	4.0	156.6	SB 395	395	4.0	7.5	402.0
SB 160	160	2.5	4.0	163.6	SB 400	400	4.0	7.5	407.0
SB 163	163	2.5	4.0	166.6	SB 410	410	4.0	7.5	417.0
SB 165	165	2.5	4.0	168.6	SB 415	415	4.0	7.5	422.0
SB 170	170	2.5	4.0	173.6	SB 420	420	4.0	7.5	427.0
SB 173	173	2.5	4.0	176.6	SB 430	430	4.0	7.5	437.0
SB 175	175	2.5	4.0	178.6	SB 440	440	4.0	7.5	447.0
SB 180	180	2.5	4.0	183.6					
SB 183	183	3.0	5.0	186.6					
SB 190	190	3.0	5.0	194.5					
SB 195	195	3.0	5.0	199.5					
SB 200	200	3.0	5.0	204.5					
SB 205	205	3.0	5.0	209.5					
SB 210	210	3.0	5.0	214.5					
SB 215	215	3.0	5.0	219.5					
SB 220	220	3.0	5.0	224.5					
SB 225	225	3.0	5.0	229.5					
SB 230	230	3.0	5.0	234.5					
SB 240	240	3.0	5.0	244.5					
SB 250	250	4.0	7.5	254.5					
SB 260	260	4.0	7.5	267.0					
SB 270	270	4.0	7.5	277.0					
SB 280	280	4.0	7.5	287.0					

Metric Snap Rings



SP Type Snap Ring (DIN 5417)

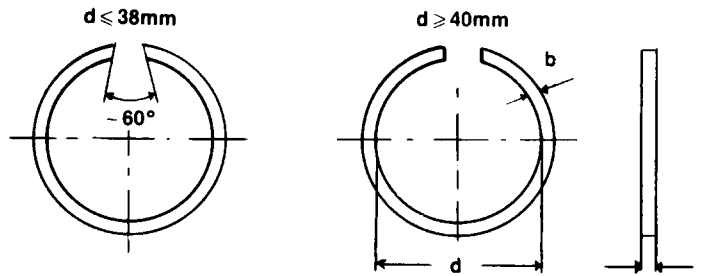
Part No.	Shaft Ø mm	s -0.1	b -0.15	d min.	Part No.	Shaft Ø mm	s -0.1	b -0.15	d min.
SP 30	30	1.12	3.25	27.4	SP 115	115	2.46	4.85	110.2
SP 32	32	1.12	3.25	29.4	SP 120	120	2.82	7.21	113.6
SP 35	35	1.12	3.25	32.4	SP 125	125	2.82	7.21	118.6
SP 37	37	1.12	3.25	34.0	SP 130	130	2.82	7.21	123.6
SP 40	40	1.12	3.25	37.3	SP 140	140	2.82	7.21	133.0
SP 42	42	1.12	3.25	38.9	SP 145	145	2.82	7.21	138.0
SP 44	44	1.12	3.25	40.9	SP 150	150	2.82	7.21	142.9
SP 47	47	1.12	4.04	43.7	SP 160	160	2.82	7.21	152.9
SP 50	50	1.12	4.04	46.7	SP 170	170	3.10	9.60	161.3
SP 52	52	1.12	4.04	48.8	SP 180	180	3.10	9.60	171.2
SP 62	62	1.70	4.04	58.2	SP 200	200	3.10	9.60	191.0
SP 65	65	1.70	4.04	61.2	SP 210	210	3.10	9.60	200.9
SP 68	68	1.70	4.85	63.4	SP 215	215	3.10	9.60	205.9
SP 72	72	1.70	4.85	67.4	SP 225	225	3.50	10.00	214.3
SP 75	75	1.70	4.85	70.4	SP 230	230	3.50	10.00	219.2
SP 80	80	1.70	4.85	75.4					
SP 85	85	1.70	4.85	80.4					
SP 90	90	2.46	4.85	85.4					
SP 95	95	2.46	4.85	90.4					
SP 100	100	2.46	4.85	95.2					
SP 110	110	2.46	4.85	105.2					



SW Type Snap Ring

Part No.	Shaft Ø mm	s -0.1	b -0.15	d min.	Part No.	Shaft Ø mm	s -0.1	b -0.15	d min.
SW 4	4	0.5	0.80	3.7	SW 11	11	1.0	1.30	10.2
SW 5	5	0.5	1.00	4.7	SW 12	12	1.0	1.30	11.2
SW 6	6	0.7	1.10	5.6	SW 13	13	1.0	1.30	12.2
SW 7	7	0.7	1.20	6.5	SW 14	14	1.2	1.50	13.1
SW 8	8	1.0	1.30	7.4	SW 15	15	1.2	1.75	14.0
SW 9	9	1.0	1.30	8.4	SW 16	16	1.2	1.75	15.0
SW 10	10	1.0	1.30	9.4	SW 17	17	1.2	1.75	16.0

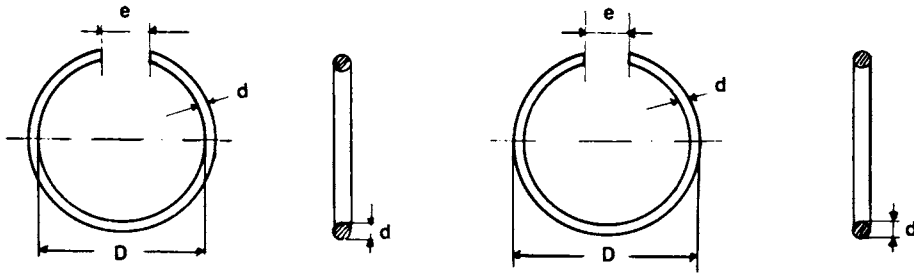
Metric Snap Rings



SW Type Snap Ring

Part No.	Shaft Ø mm	s -0.1	b -0.1	d min.	Part No.	Shaft Ø mm	s -0.1	b -0.1	d min.
SW 18	18	1.2	1.75	17.0	SW 150	150	2.5	4.00	146.6
SW 19	19	1.2	1.75	17.9	SW 155	155	2.5	4.00	151.6
SW 20	20	1.2	1.75	18.7	SW 160	160	2.5	4.00	156.6
SW 21	21	1.2	1.75	19.7	SW 165	165	2.5	4.00	161.6
SW 22	22	1.2	1.75	20.7	SW 170	170	2.5	4.00	166.6
SW 24	24	1.2	1.75	22.5	SW 175	175	2.5	4.00	171.6
SW 25	25	1.2	1.75	23.5	SW 180	180	3.0	5.00	175.6
SW 26	26	1.2	1.75	24.5	SW 185	185	3.0	5.00	180.6
SW 27	27	1.5	2.30	25.5	SW 190	190	3.0	5.00	185.6
SW 28	28	1.5	2.30	26.5	SW 195	195	3.0	5.00	190.6
SW 30	30	1.5	2.30	28.5	SW 200	200	3.0	5.00	195.6
SW 32	32	1.5	2.30	30.2	SW 210	210	3.0	5.00	205.6
SW 35	35	1.5	2.30	33.2	SW 220	220	3.0	5.00	215.6
SW 37	37	1.5	2.30	35.2	SW 230	230	3.0	5.00	225.6
SW 38	38	1.5	2.30	36.2	SW 240	240	3.0	5.00	235.6
SW 40	40	1.5	2.30	37.8	SW 250	250	3.0	5.00	245.6
SW 42	42	1.5	2.30	39.8	SW 260	260	4.0	7.50	253.0
SW 43	43	1.5	2.30	40.8	SW 265	265	4.0	7.50	258.0
SW 45	45	1.5	2.30	42.8	SW 270	270	4.0	7.50	263.0
SW 47	47	1.5	2.30	44.8	SW 280	280	4.0	7.50	273.0
SW 48	48	1.5	2.30	45.8	SW 285	285	4.0	7.50	278.0
SW 50	50	1.5	2.30	47.8	SW 290	290	4.0	7.50	283.0
SW 52	52	1.5	2.30	49.8	SW 300	300	4.0	7.50	293.0
SW 55	55	1.5	2.30	52.6	SW 305	305	4.0	7.50	298.0
SW 58	58	1.5	2.30	55.6	SW 310	310	4.0	7.50	303.0
SW 60	60	1.5	2.30	57.6	SW 320	320	4.0	7.50	313.0
SW 63	63	1.5	2.30	60.6	SW 330	330	4.0	7.50	332.0
SW 65	65	1.5	2.30	62.6	SW 340	340	4.0	7.50	333.0
SW 68	68	2.0	2.80	65.4	SW 350	350	4.0	7.50	343.0
SW 70	70	2.0	2.80	67.4	SW 360	360	4.0	7.50	353.0
SW 72	72	2.0	2.80	69.4	SW 370	370	4.0	7.50	363.0
SW 73	73	2.0	2.80	70.4	SW 380	380	4.0	7.50	373.0
SW 75	75	2.0	2.80	72.4	SW 390	390	4.0	7.50	383.0
SW 80	80	2.0	2.80	77.4	SW 400	400	4.0	7.50	393.0
SW 85	85	2.5	3.40	82.0					
SW 90	90	2.5	3.40	87.0					
SW 95	95	2.5	3.40	92.0					
SW 100	100	2.5	3.40	97.0					
SW 105	105	2.5	3.40	101.7					
SW 110	110	2.5	3.40	106.7					
SW 115	115	2.5	3.40	111.7					
SW 120	120	2.5	3.40	116.7					
SW 125	125	2.5	3.40	121.7					
SW 130	130	2.5	3.40	126.7					
SW 135	135	2.5	4.00	131.6					
SW 140	140	2.5	4.00	136.6					
SW 145	145	2.5	4.00	141.6					

Metric Snap Rings



RW (External) Type Snap Ring (DIN 7993)

RB (Internal) Type Snap Ring (DIN 7993)

Part No.	Shaft Ø mm	d	D	e	Part No.	Shaft Ø mm	d	D	e
RW 20	20	2.0	17.7	3	RB 20	20	2.0	22.3	10
RW 22	22	2.0	19.7	3	RB 22	22	2.0	24.3	10
RW 24	24	2.0	21.7	3	RB 25	25	2.0	27.3	10
RW 25	25	2.0	22.7	3	RB 26	26	2.0	28.3	10
RW 26	26	2.0	23.7	3	RB 28	28	2.0	30.3	10
RW 28	28	2.0	25.7	3	RB 30	30	2.0	32.3	10
RW 30	30	2.0	27.7	3	RB 32	32	2.5	34.9	12
RW 32	32	2.5	29.1	4	RB 35	35	2.5	37.9	12
RW 35	35	2.5	32.1	4	RB 38	38	2.5	40.9	12
RW 38	38	2.5	35.1	4	RB 40	40	2.5	42.9	12
RW 40	40	2.5	37.1	4	RB 42	42	2.5	45.0	16
RW 45	45	2.5	42.0	4	RB 48	48	2.5	51.0	16
RW 50	50	2.5	47.0	4	RB 60	60	3.2	63.9	20
RW 55	55	3.2	51.5	4	RB 65	65	3.2	68.9	20
RW 60	60	3.2	56.1	4	RB 70	70	3.2	74.0	25
RW 65	65	3.2	61.1	4	RB 75	75	3.2	79.0	25
RW 70	70	3.2	66.0	5	RB 80	80	3.2	84.0	25
RW 75	75	3.2	71.0	5	RB 85	85	3.2	89.0	25
RW 80	80	3.2	76.0	5	RB 90	90	3.2	94.0	25
RW 85	85	3.2	81.0	5	RB 100	100	3.2	104.2	32
RW 90	90	3.2	86.0	5	RB 105	105	3.2	109.2	32
RW 95	95	3.2	91.0	5	RB 110	110	3.2	114.2	32
RW 105	105	3.2	100.8	5					
RW 110	110	3.2	105.8	5					
RW 120	12	3.2	115.8	5					

Retaining Ring And E-Ring Kits



RETAINING RINGS



E-RINGS



FOR BORES DIN 472		FOR SHAFTS DIN 471	
Size	Quantity	Size	Quantity
15 mm	20	8 mm	20
16 mm	20	10 mm	20
18 mm	15	12 mm	15
20 mm	15	14 mm	15
22 mm	15	15 mm	15
24 mm	15	16 mm	15
25 mm	10	17 mm	10
26 mm	10	18 mm	10
28 mm	10	20 mm	10
30 mm	10	22 mm	10
32 mm	10	24 mm	10
34 mm	10	25 mm	10
35 mm	10	28 mm	10
38 mm	10	30 mm	10
40 mm	10	32 mm	10
		35 mm	10
		40 mm	10

E-RINGS DIN 6799	
Size	Quantity
1.2 mm	500
1.5 mm	500
1.9 mm	500
2.3 mm	500
3.2 mm	500
4 mm	500
5 mm	300
6 mm	200
7 mm	100
8 mm	100
9 mm	50
10 mm	50