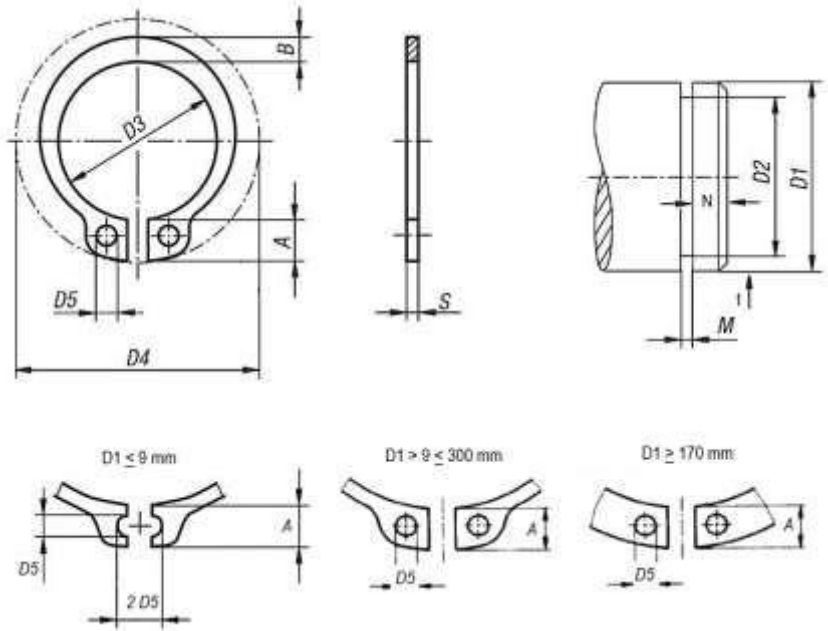




Product Dimensions and Weights
Specifications

DIN 471

Metric DIN 471 External Retaining Rings for Shafts



Dimensions of Metric DIN 471 Retaining Rings for Shafts

Shaft Dia		Clip							Groove					Supplementary data							
d1	s		f3		a	b	d5	weight kg/1000pcs	d2		m	t	n	d4	FN	FR	g	FRg	nabl	Nominal size of pliers per DIN 5254	
Nominal size		per. dev.		per. dev.	max.	approx.	min.			per. dev.	H13		min.	kN		kN		kN	min-1		
3	0.4	0 - 0.05	2.7	0.04 - 0.15	1.9	0.8	1	0.017	2.8	0 -0.04	0.5	0.1	0.3	7	0.15	0.47	0.5	0.27	360000	3	
4	0.4		3.7		2.2	0.9	1	0.022	3.8	0 - 0.048	0.5	0.1	0.3	8.6	0.2	0.5	0.5	0.3	211000		
5	0.6		4.7		2.5	1.1	1	0.066	4.8		0.7	0.1	0.3	10.2	0.26	1	0.5	0.8	154000		
6	0.7		5.6	0.06 - 0.18	2.7	1.3	1.2	0.084	5.7		(h10)	0.8	0.15	0.5	11.7	0.46	1.45	0.5	0.9		114000
7	0.8				6.5	3.1	1.4	1.2	0.121		6.7	0	0.9	0.15	0.5	13.5	0.54	2.6	0.5		1.4
8	0.8				7.4	3.2	1.5	1.2	0.158	7.6	-0.06	0.9	0.2	0.6	14.7	0.81	3	0.5	2		96000
9	1				0	8.4	3.3	1.7	1.2	0.3	8.6	(h10)	1.1	0.2	0.6	16	0.92	3.5	0.5		2.4

All measurements are in mm

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Shaft Dia		Clip								Groove				Supplementary data							
d1	s		d3		a	b	d5	weight kg/1000pcs	l2		m	t	n	d4	FN	FR	g	FRg	nabl	Nominal size of pliers per DIN 5254	
Nominal size		per. dev.		per. dev.	max.	approx.	min.			per. dev.	H13		min.	kN		kN		kN	min-1		
10	1	-0.06	9.3	0.1	3.3	1.8	1.5	0.34	9.6		1.1	0.2	0.6	17	1.01	4	1	2.4	84000	10	
11	1		10.2	-0.4	3.3	1.8	1.5	0.41	10.5	0	1.1	0.25	0.8	18	1.4	4.5	1	2.4	70000		
12	1		11	3.3	1.8	1.7	0.5	11.5	-0.11 (h11)	1.1	0.25	0.8	19	1.53	5	1	2.4	75000			
13	1		11.9	3.4	2	1.7	0.53	12.4	1.1	0.3	0.9	20.2	2	5.8	1	2.4	66000				
14	1		12.9	3.5	2.1	1.7	0.64	13.4	1.1	0.3	0.9	21.4	2.15	6.35	1	2.4	58000				
15	1		13.8	3.6	2.2	1.7	0.67	14.3	1.1	0.35	1.1	22.6	2.66	6.9	1	2.4	50000				
16	1		14.7	3.7	2.2	1.7	0.7	15.2	1.1	0.4	1.2	23.8	3.26	7.4	1	2.4	45000				
17	1		15.7	3.8	2.3	1.7	0.82	16.2	1.1	0.4	1.2	25	3.46	8	1	2.4	41000				
18	1.2		16.5	3.9	2.4	2	1.11	17	1.3	0.5	1.5	26.2	4.58	17	1.5	3.75	39000				
19	1.2	17.5	3.9	2.5	2	1.22	18	1.3	0.5	1.5	27.2	4.84	17	1.5	3.8	35000	19				
20	1.2	18.5	0.13	4	2.6	2	1.3	19	0	1.3	0.5	1.5	28.4	5.06	17.1	1.5		3.85	32000		
21	1.2	19.5	-0.4	4.1	2.7	2	1.42	20	-0.13 (h11)	1.3	0.5	1.5	29.6	5.36	16.8	1.5		3.75	29000		
22	1.2	20.5	4.2	2.8	2	1.5	21	1.3	0.5	1.5	30.8	5.65	16.9	1.5	3.8	27000					
24	1.2	22.2	0.21	4.4	3	2	1.77	22.9	0	1.3	0.55	1.7	33.2	6.75	16.1	1.5		3.65	27000		
25	1.2	23.2	-0.4	4.4	3	2	1.9	23.9	-0.21 (h12)	1.3	0.55	1.7	34.2	7.05	16.2	1.5		3.7	25000		
26	1.2	24.2	4.5	3.1	2	1.96	24.9	1.3	0.55	1.7	35.5	7.34	16.1	1.5	3.7	24000					
28	1.5	25.9	4.7	3.2	2	2.92	26.6	1.6	0.7	2.1	37.9	10	32.1	1.5	7.5	21200					
29	1.5	26.9	7.8	3.4	2	3.2	27.6	1.6	0.7	2.1	39.1	10.4	31.8	1.5	7.45	20000					
30	1.5	27.9	5	3.5	2	3.31	28.6	1.6	0.7	2.1	40.5	10.7	32.1	1.5	7.65	18900					
32	1.5	29.6	5.2	3.6	2.5	3.54	30.3	0	1.6	0.85	2.6	43	13.9	31.2	2	5.55	16900				
34	1.5	31.5	0.25 -	5.4	3.8	2.5	3.8	32.3	-0.25 (h12)	1.6	0.85	2.6	45.4	14.7	31.3	2	5.6		16100		
35	1.5	32.2	0.5	5.6	3.9	2.5	4	33	1.6	1	3	46.8	17.8	30.8	2	5.55	15500				
36	1.8	33.2	5.6	4	2.5	5	34	1.85	1	3	47.8	18.3	49.4	2	9	14500					

All measurements are in mm

Shaft Dia	Clip								Groove					Supplementary data											
d1	s		d3		a	b	d5		d2		m		n	d4		FR			FRg	nabl					
Nominal size		per. dev.		per. dev.	max.	approx.	min.	weight kg/1000pcs		per. dev.	H13	t	min.	kN	FN	kN	g	kN	min-1	Nominal size of pliers per DIN 5254					
40	1.8	0	36.5	0.39 - 0.9	6	4.4	2.5	6.03	37.5	0	1.85	1.25	3.8	52.6	25.3	51	2	9.5	14300	40					
42	1.8		38.5		6.5	4.5	2.5	6.5	39.5		1.85	1.25	3.8	55.7	26.7	50	2	9.45	13000						
45	1.8		41.5		6.7	4.7	2.5	7.5	42.5		1.85	1.25	3.8	59.1	28.6	49	2	9.35	11400						
48	2		44.5		6.9	5	2.5	7.9	45.5		1.85	1.25	3.8	62.5	30.7	49.4	2	9.55	10300						
50	2	0.07	45.8	0.46 -1.1	6.9	5.1	2.5	10.2	47	-0.3 (h12)	2.15	1.5	4.5	64.5	38	73.3	2	14.4	10500						
52	2		47.8		7	5.2	2.5	11.1	49		2.15	1.5	4.5	66.7	39.7	73.1	2.5	11.5	9850						
55	2		50.8		7.2	5.4	2.5	11.4	52		2.15	1.5	4.5	70.2	42	71.4	2.5	11.4	8960						
56	2		51.8								7.3	5.5	2.5	11.8	53	2.15	1.5	4.5	71.6		42.8	70.8	2.5	11.4	8670
58	2		53.8								7.3	5.6	2.5	12.6	55	2.15	1.5	4.5	73.6		44.3	71.1	2.5	11.5	8200
60	2		55.8								7.4	5.8	2.5	12.9	57	2.15	1.5	4.5	75.6		46	69.2	2.5	11.3	7620
62	2		57.8								7.5	6	2.5	1.3	59	2.15	1.5	4.5	77.8		47.5	69.3	2.5	11.5	7240
63	2		58.8								7.6	6.2	2.5	15.9	60	2.15	1.5	4.5	79		48.3	70.2	2.5	11.6	7050
65	2.5	60.8	7.8	6.3						3	18.2	62	2.65	1.5	4.5	81.4	49.8	136	2.5		22.7	6640			
68	2.5	63.5	8	6.2	3	21.8	65	2.65	1.5	4.5	84.8	52.2	136	2.5	23.1	6910									
70	2.5	65.5	8.1	6.6	3	22	67	2.65	1.5	4.5	87	53.8	134	2.5	23	6530									
72	2.5	67.5	8.2	6.8	3	22.5	69	2.65	1.5	4.5	89.2	55.3	132	2.5	22.8	6190									
75	2.5	70.5	8.4	7	3	24.6	72	2.65	1.5	4.5	92.7	57.6	130	2.5	22.8	5740									



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78	2.5	73.5	8.6	7.3	3	26.2	75	2.65	1.5	4.5	96.1	60	131	3	19.8	5450
80	2.5	74.5	8.6	7.4	3	27.3	76.5	2.65	1.75	5.3	98.1	71.6	128	3	19.5	6100
82	2.5	76.5	8.7	7.6	3	31.2	78.5	2.65	1.75	5.3	100	73.5	128	3	19.6	5860

All measurements are in mm

Shaft Dia		Clip							Groove					Supplementary data							Nominal size of pliers per DIN 5254
d1	s		d3		a	b	d5	l2		m	n		d4	FR		FRg		nabl			
Nominal size		per. dev.		per. dev.	max.	approx.	min.	weight kg/1000pcs		per. dev.	H13	t	min.	kN	FN	kN	g	kN	min-1		
85	3	0	79.5	0.54 -1.3	8.7	7.8	3.5	36.4	81.5	0	3.15	1.75	5.3	103	76.2	215	3	33.4	5710		
88	3	-0.08	82.5		8.8	8	3.5	41.2	84.5	-0.35	3.15	1.75	5.3	107	79	222	3	34.9	5200		
90	3		84.5		8.8	8.2	3.5	44.5	86.5	(h12)	3.15	1.75	5.3	109	80.8	217	3	34.4	4980		
95	3		89.5		9.4	8.6	3.5	49	91.5		3.15	1.75	5.3	115	85.5	212	3.5	29.3	4550		
100	3	0	94.5		9.6	9	3.5	53.7	96.5		3.15	1.75	5.3	120	90	206	3.5	29	4180		
105	4	-0.1	98		9.9	9.3	3.5	80	101	0	4.15	2	6	126	108	472	3.5	67.7	4740		
110	4		103		10	9.6	3.5	82	106	-0.54	4.15	2	6	131	113	457	3.5	66.9	4340		
115	4		108		11	9.8	3.5	84	111	(h13)	4.15	2	6	137	118	439	3.5	65.5	3970		
120	4		113		11	10.2	3.5	86	116		4.15	2	6	143	124	427	3.5	64.5	3685		

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Shaft Dia	Clip								Groove					Supplementary data								Nominal size of pliers per DIN 5254
d1	s		l3		a	b	d5	d2		m		n	d4		FR		FRg	nabl				
Nominal size		per. dev.		per. dev.	max.	approx.	min.	weight kg/1000pcs		per. dev.	H13	t	min.	kN	FN	kN	g	kN	min-1			
125	4	-	118	1.5	11	10.4	4	90	121	-0.63 (h13)	4.15	2	6	149	129	412	4	56.5	3420	125		
130	4		123		0.63 -	12	10.7	4	100		126	4.15	2	6	154	134	2396	4	55.2		3180	
135	4		128		12	11	4	104	131		4.15	2	6	160	139	390	4	55.4	2950			
140	4		133		12	11.2	4	110	136		4.15	2	6	165	145	377	4	54.4	2760			
145	4		138		12	11.5	4	115	141		4.15	2	6	171	150	367	4	53.8	2600			
150	4		142		13	11.8	4	120	145		4.15	2.5	7.5	177	193	358	4	53.4	2480			
155	4		146		13	12	4	135	150		4.15	2.5	7.5	182	200	353	4	52.6	2710			
160	4		151		13	12.2	4	150	155		4.15	2.5	7.5	188	206	349	4	52.2	2540			
165	4		156		14	12.5	4	160	160		4.15	2.5	7.5	193	213	345	4	41.4	2520			
170	4		161		14	12.9	4	170	165		4.15	2.5	7.5	198	219	349	4	41.9	2440			
175	4		166		14	12.9	4	180	170		4.15	2.5	7.5	203	226	340	5	40.7	2300			
180	4		171		14	13.5	4	190	175		4.15	2.5	7.5	210	232	345	5	41.4	2790			
185	4	176	14	13.5	4	200	180	4.15	2.5	7.5	215	239	337	5	40.4	2070						
190	4	0.12	181	-1.7	14	14	4	210	185	-0.72 (h13)	4.15	2.5	7.5	220	245	334	5	40	1970			
195	4		186		14	14	4	220	190		4.15	2.5	7.5	225	252	325	5	39	1835			
200	4		191		14	14	4	230	195		4.15	2.5	7.5	230	258	319	5	38.3	1770			
210	5		198		14	14	4	248	204		5.15	3	9	240	325	598	6	59.9	1835			
220	5		208		14	14	4	265	214		5.15	3	9	250	341	572	6	57.3	1620			
230	5		218		14	14	4	290	224		5.15	3	9	260	357	549	6	55	1445			
240	5		228		14	14	4	310	234		5.15	3	9	270	373	530	6	53	1305			
250	5		238		14	14	4	335	244		5.15	3	9	280	388	504	6	50.5	1180			
260	5		245		16	16	5	355	252		0	5.15	4	12	294	536	541	6	54.6		1320	
270	5		255		16	16	5	375	262		-0.81 (h13)	5.15	4	12	304	557	525	6	52.5		1215	
280	5		265		16	16	5	398	272			5.15	4	12	314	577	508	6	50.9		1100	
290	5		275		16	16	5	418	282			5.15	4	12	324	599	491	6	49.2	1005		

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300	5	285	16	16	5	440	292	5.15	4	12	334	619	475	6	47.5	930
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All measurements are in mm

Metric DIN 471 External Retaining Rings (aka circlips) are thin, circular, metal stampings that are used to prevent movement between mating components. These are designed to be assembled axially onto a shaft and to be fit into a groove on the outside of the shaft. They function to reduce vibration and maintain proper position of two parts in an assembly and permit easy disassembly of the components by removing the retaining ring. Unique Fasteners offers one of the most complete ranges of metric retaining rings and other inch and metric industrial fasteners for immediate delivery from stock. The following sizes of metric DIN 471 Retaining Rings are available for immediate shipping from stock: Diameters ranging from M3 to M120 in A2 stainless steel.

DIN (**D**eutsches **I**nstitut für **N**ormung - German Institute for Standardization) standards are issued for a variety of components including industrial fasteners as metric DIN 471 Retaining Rings. The DIN standards remain common in Germany, Europe and globally even though the transition to ISO standards is taking place. DIN standards continue to be used for parts which do not have ISO equivalents or for which there is no need for standardization like DIN 471 Retaining Rings.