



RETAINING  
RINGS

**JIMKOO**

Fastener

# Retaining Rings

**DIN471**

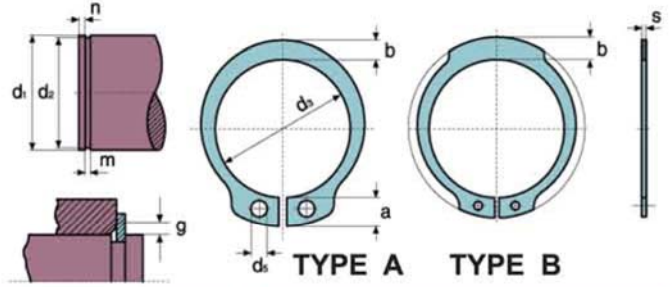


**Material:**

Spring steel 65MN  
& Stainless steel

$d1 \leq 48$  HRC 47-54  
 $48 < d1 \leq 200$  HRC 44-51  
 $200 < d1 < 300$  HRC 40-47

Surface: Black, Phosphated, Zinc Plated



Every little correct step lead us to success.

**JIMKOO®**

Catalog-No.	Thickness mm		Diameter mm	
$d_1$	$s$	$d_3$		
4	0.4	0	3.7	+0.04
5	0.6		4.7	-0.15
6	0.7		5.6	
7	0.8		6.5	+0.06
8	0.8		7.4	-0.18
9	1		8.4	
10	1	-0.05	9.3	
11	1		10.2	
12	1		11	
13	1		11.9	
14	1		12.9	+0.10
15	1		13.8	-0.36
16	1		14.7	
17	1		15.7	
18	1.2		16.5	
19	1.2		17.5	
20	1.2	18.5	+0.13	
21	1.2	19.5	-0.42	
22	1.2	20.5		
23	1.2	21.5		
24	1.2	22.2		
25	1.2	23.2		
26	1.2	24.2	+0.21	
27	1.2	24.9	-0.42	
28	1.5	25.9		
29	1.5	26.9		
30	1.5	27.9		
31	1.5	28.6		
32	1.5	29.6		
33	1.5	30.5	+0.25	
34	1.5	31.5	-0.50	
35	1.5	32.2		
36	1.75	33.2		
37	1.75	34.2		
38	1.75	35.2		
39	1.75	36		
40	1.75	36.5		
41	1.75	37.5	+0.39	
42	1.75	38.5	-0.90	
43	1.75	39.5		
44	1.75	40.5		
45	1.75	41.5		
46	1.75	42.5		
47	1.75	43.5		
48	1.75	44.5		
50	2	0	45.8	
51	2		46.8	
52	2		47.8	
54	2		49.8	+0.46
55	2		50.8	-1.10

Catalog-No.	Thickness mm		Diameter mm	
$d_1$	$s$	$d_3$		
56	2	0	51.8	
57	2		52.8	
58	2		53.8	
60	2		55.8	
62	2		57.8	
63	2		58.8	
65	2.5		60.8	
67	2.5		62.5	+0.46
68	2.5		63.5	-1.10
70	2.5		65.5	
72	2.5	67.5		
75	2.5	70.5		
77	2.5	72.5		
78	2.5	73.5		
80	2.5	74.5		
82	2.5	76.5		
85	3	-0.07	79.5	
87	3		81.5	
88	3		82.5	
90	3		84.5	
92	3		86.5	
95	3		89.5	
97	3		91.5	
98	3		92.5	
100	3		94.5	
102	4		95	
105	4	98	+0.54	
107	4	100	-1.30	
108	4	101		
110	4	103		
112	4	105		
115	4	108		
117	4	110		
118	4	110		
120	4	113		
122	4	0	115	
125	4		118	
127	4		120	
128	4		120	
130	4		123	
132	4		125	
135	4		128	
137	4		130	
138	4		130	
140	4		133	+0.63
142	4	135	-1.50	
145	4	138		
147	4	140		
148	4	140		
150	4	142		

Catalog-No.	Thickness mm		Diameter mm	
$d_1$	$s$	$d_3$		
152*	4	0	143	
155	4		146	
157*	4		148	
158*	4		148	
160	4		151	
162*	4		152.5	
165	4		155.5	
167*	4		157.5	+0.63
168*	4		157.5	-1.50
170	4		160.5	
172*	4	160.5		
175	4	165.5		
177*	4	167.5		
178*	4	167.5		
180	4	-0.10	170.5	
182*	4		170.5	
185	4		175.5	
187*	4		177.5	
188*	4		177.5	
190	4		180.5	
192*	4		180.5	
195	4		185.5	
197*	4		187.5	
198*	4		187.5	
200	4	190.5		
205*	5	0	193	
210	5		198	
215*	5		203	+0.72
220	5		208	-1.70
225*	5		213	
230	5		218	
235*	5		223	
240	5		228	
245*	5		233	
250	5		238	
255*	5	240		
260	5	245		
265*	5	250		
270	5	255		
275*	5	260		
280	5	265	+0.81	
285*	5	270	-2.00	
290	5	275		
295*	5	280		
300	5	285		

$d_1$  is up to 500.

\* Non standard

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# Retaining Rings

DIN472

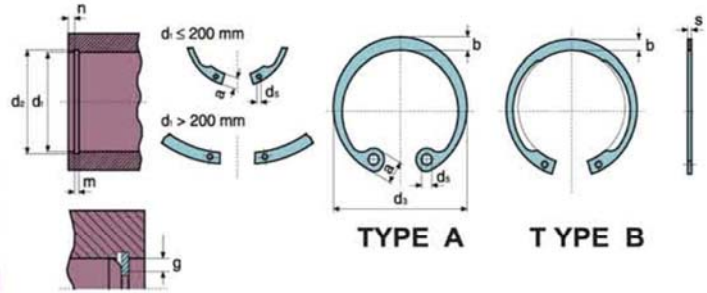


Material:

Spring steel 65MN  
& Stainless steel

$d1 \leq 48$  HRC 47-54  
 $48 < d1 \leq 200$  HRC 44-51  
 $200 < d1 < 300$  HRC 40-47

Surface: Black, Phosphated, Zinc Plated



TYPE A

TYPE B

Catalog- No.	Thickness mm	Diameter mm	
d1	s	d3	
8	0.8	0	8.7
9	0.8	-0.05	9.8
10	1		10.8
11	1		11.8
12	1		13
13	1		14.1
14	1		15.1
15	1		16.2
16	1		17.3
17	1		18.3
18	1		19.5
19	1		20.5
20	1		21.5
21	1		22.5
22	1		23.5
23	1.2		24.6
24	1.2		25.9
25	1.2	0	26.9
26	1.2	-0.06	27.9
27	1.2		29.1
28	1.2		30.1
29	1.2		31.1
30	1.2		32.1
31	1.2		33.4
32	1.2		34.4
33	1.2		35.5
34	1.5		36.5
35	1.5		37.8
36	1.5		38.8
37	1.5		39.8
38	1.5		40.8
39	1.5		42
40	1.75		43.5
41	1.75		44.5
42	1.75		45.5
43	1.75		46.5
44	1.75		47.5
45	1.75		48.5
46	1.75		49.5
47	1.75		50.5
48	1.75		51.5
49	1.75		52.5
50	2		54.2
51	2		55.2
52	2		56.2
53	2	0	57.2
54	2	-0.07	58.2
55	2		59.2
56	2		60.2
57	2		61.2

Catalog- No.	Thickness mm	Diameter mm	
d1	s	d3	
58	2		62.2
60	2		64.2
62	2		66.2
63	2		67.2
64	2		68.2
65	2.5		69.2
67	2.5		71.5
68	2.5	0	72.5
70	2.5	-0.07	74.5
72	2.5		76.5
75	2.5		79.5
76	2.5		80.5
77	2.5		82.5
78	2.5		82.5
80	2.5		85.5
82	2.5		87.5
83	2.5		88.5
85	3		90.5
87	3		93.5
88	3	0	93.5
90	3	-0.08	95.5
92	3		97.5
95	3		100.5
97	3		103.5
98	3		103.5
100	3		105.5
102	4		108
105	4		112
107	4		115
108	4		115
110	4		117
112	4		119
115	4		122
117	4		125
118	4		125
120	4		127
122	4	0	129
125	4	-0.10	132
127	4		135
128	4		135
130	4		137
132	4		139
135	4		142
137	4		145
138	4		145
140	4		147
142	4		149
145	4		152
147	4		155
148	4		155

Catalog- No.	Thickness mm	Diameter mm	
d1	s	d3	
150	4		158
152*	4		161
155	4		164
157*	4		167
158*	4		167
160	4		169
162*	4		171.5
165	4		174.5
167*	4		177.5
168*	4		177.5
170	4		179.5
172*	4		181.5
175	4	0	184.5
177*	4	-0.10	187.5
178*	4		187.5
180	4		189.5
182*	4		191.5
185	4		194.5
187*	4		197.5
188*	4		197.5
190	4		199.5
192*	4		201.5
195	4		204.5
197*	4		207.5
198*	4		207.5
200	4		209.5
205*	5		217
210	5		222
215*	5		227
220	5		232
225*	5		237
230	5		242
235*	5		247
240	5		252
245*	5		257
250	5	0	262
255*	5	-0.12	270
260	5		275
265*	5		280
270	5		285
275*	5		290
280	5		295
285*	5		300
290	5		305
295*	5		310
300	5		315

d1 is up to 500.

\* Non standard

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# Retaining Rings

## DIN6799



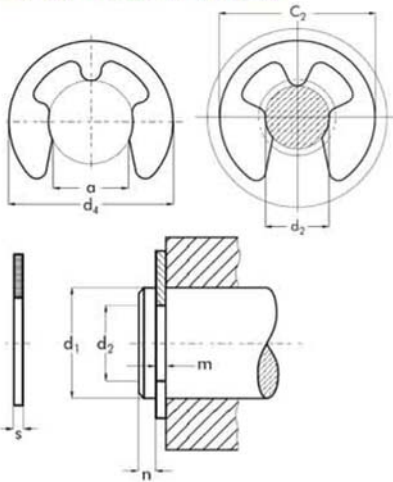
### Material:

Spring steel 65MN  
& Stainless steel

$d_1 \leq 48$  HRC 47-54  
 $48 < d_1 \leq 200$  HRC 44-51  
 $200 < d_1 \leq 300$  HRC 40-47

### Surface:

Black,  
Phosphated,  
Zinc Plated



The DIN6799 retaining rings are radially mounted rings for shafts, offering wide application possibilities. Their mounting comes about by simply pushing the ring in the slot on the shaft using the special mounting pliers.

d <sub>2</sub> mm	s mm	a mm	d <sub>4</sub> *		KG/1000
			Old	New	
1.2	0.3	1.01	3.25	2.90	0.009
1.5	0.4	1.28	4.25	3.90	0.021
1.9	0.5	1.61	4.80	4.40	0.040
2.3	0.6	1.94	6.30	5.90	0.069
3.2	0.6	2.70	7.30	6.90	0.088
4.0	0.7	3.34	9.30	8.85	0.158
5.0	0.7	4.11	11.30	10.85	0.236
6.0	0.7	5.26	12.30	11.80	0.255
7.0	0.9	5.84	14.30	13.80	0.474
8.0	1.0	6.52	16.30	15.75	0.660
9.0	1.1	7.63	18.80	18.20	1.090
10.0	1.2	8.32	20.40	19.70	1.250
12.0	1.3	10.45	23.40	22.70	1.630
15.0	1.5	12.61	29.40	28.70	3.370
19.0	1.8	15.92	37.60	36.50	6.420
24.0	2.0	21.88	44.60	43.50	8.550

\* d<sub>4</sub> is different due to the two sets of mold.

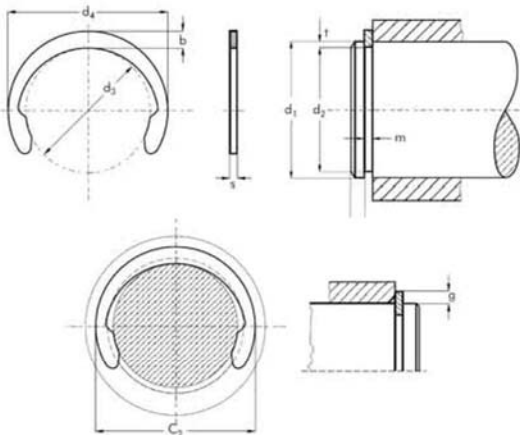
## M1800 /H (Crescent Ring)



### Material:

Spring steel 65MN  
& Stainless steel

Surface: Black,  
Phosphated, Zinc Plated



d <sub>1</sub> mm	s mm	d <sub>3</sub> mm	d <sub>1</sub> mm	s mm	d <sub>3</sub> mm
3	0.40	2.18	22	1.20	19.40
4	0.40	3.00	23	1.20	20.20
5	0.60	3.80	24	1.20	21.10
6	0.70	4.80	25	1.20	22.00
6.5	0.70	5.60	26	1.20	22.90
7	0.80	5.80	28	1.50	24.60
8	0.80	6.80	30	1.50	26.30
9	1.00	7.80	32	1.50	28.10
10	1.00	8.75	35	1.50	30.80
11	1.00	9.65	36	1.75	31.70
12	1.00	10.55	38	1.75	33.40
13	1.00	11.40	40	1.75	35.20
14	1.00	12.30	42	1.75	37.00
15	1.00	13.20	45	1.75	39.60
16	1.00	14.10	48	1.75	42.30
17	1.00	14.90	50	2.00	44.00
18	1.20	15.80	52	2.00	46.00
19	1.20	16.70	55	2.00	48.50
20	1.20	17.55			

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## Packing Quantity

### DIN471

Dimension	Bag Qty	Carton Qty	
4	1000pcs. Per bag	900Kpcs.	
5		270Kpcs.	
6		225Kpcs.	
7		162Kpcs.	
8		90Kpcs.	
9		72Kpcs.	
10		54Kpcs.	
11-13		45Kpcs.	
14-15		36Kpcs.	
16-17		27Kpcs.	
18-20	500pcs. Per bag	18Kpcs.	
21-22		16Kpcs.	
23-25		13.5Kpcs.	
26		200pcs. per roll	9Kpcs.
27			9Kpcs.
28-32	50pcs. per roll	7.2Kpcs.	
33-35		5.4Kpcs.	
36-42		4.5Kpcs.	
43-47		5Kpcs.	
48		4.5Kpcs.	
50		3.5Kpcs.	
51-58		3Kpcs.	
60		2.8Kpcs.	
62-63		2.4Kpcs.	
65		1.7Kpcs.	
6672		1.6Kpcs.	
75		1.4Kpcs.	
78-82		1.25Kpcs.	
85-90		25pcs. per roll	800pcs.
92-95			700pcs.
97-100	600pcs.		
105	400pcs.		
106-110	350pcs.		
115-125	300pcs.		
130-135	250pcs.		
138-150	200pcs.		
155-185	150pcs.		
190-200	100pcs.		
210	10pcs. per roll	80pcs.	
230-280		40pcs.	

### DIN472

Dimension	Bag Qty	Carton Qty
9	1000pcs. per bag	135Kpcs.
10-11		72Kpcs.
12		54Kpcs.
13-15		36Kpcs.
16-17		27Kpcs.
18-20	500pcs. per bag	18Kpcs.
21-25		18Kpcs.
26-28	50pcs. per bag	12Kpcs.
29-32		9Kpcs.
33-35		5.4Kpcs.
36-42		4.5Kpcs.
43-47		5Kpcs.
48		4.5Kpcs.
50		4Kpcs.
51-52		3.5Kpcs.
53-55		3.4Kpcs.
56-63		2.5Kpcs.
65-68		1.7Kpcs.
70-72		1.6Kpcs.
75		1.5Kpcs.
78-82		1.25Kpcs.
85-90		25pcs. per roll
92-100	700pcs.	
102-105	600pcs.	
110	500pcs.	
112-125	500pcs.	
130-140	400pcs.	
145-165	300pcs.	
170	250pcs.	
175-200	200pcs.	
210-215	10pcs. per roll	
216-300		80pcs.

### DIN6799

Dimension	Bag Qty	Carton Qty
2.30	1000pcs. per bag	400Kpcs.
3.20		320Kpcs.
4.00		180Kpcs.
5.00		108Kpcs.
6.00		90Kpcs.
7.00		54Kpcs.
8.00		45Kpcs.
9.00		27Kpcs.
10.00		500pcs. per bag
12.00	13.5Kpcs.	
15.00	100pcs. per bag	9Kpcs.
19.00		4.5Kpcs.
24.00		3.2Kpcs.
30.00		2Kpcs.

### Remark:

1. DIN471 & 472, colorful box is available for dimension less than 42mm

2. DIN6799, colorful box is available for all sizes

3. Inner box size:  
14 x 19 x 17.5cm

4. Carton size:  
40 x 30 x 21cm



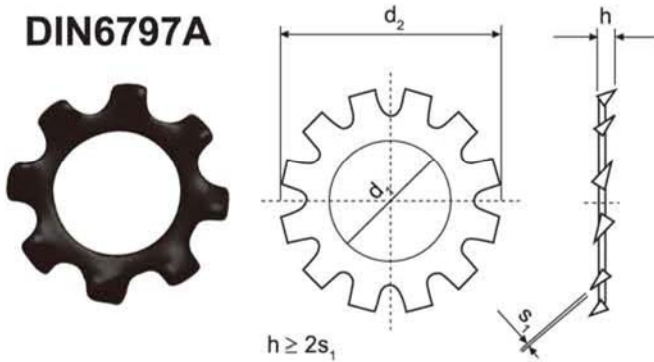
Oil Paper Rod    Plastic Rod



Color Box

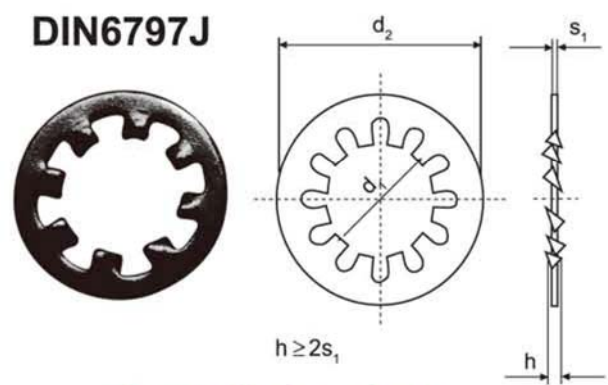
# Retaining Rings

## DIN6797A



Serrated lock washers,  
external teeth

## DIN6797J

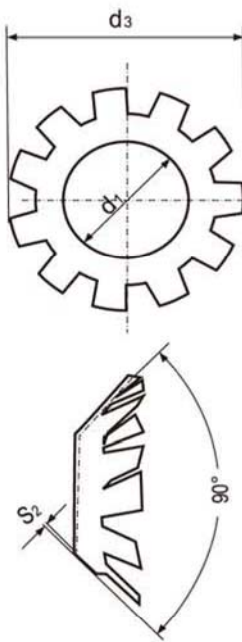



Serrated lock washers,  
internal teeth

## DIN6797V



Countersunk Toothed  
Washers

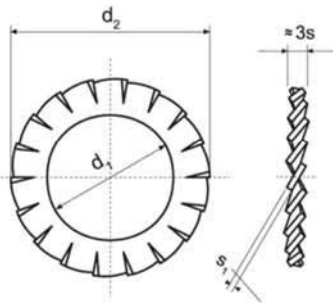


Catalog No. 	Diameter ( mm )			Thickness ( mm )		Number of Teeth			
	d	d <sub>1</sub>	d <sub>2</sub>	d <sub>3</sub>	S <sub>1</sub>	S <sub>2</sub>	A	J	V
1.6	1.7	3.6	--	--	0.3	--	6	--	--
1.7	1.8	3.8	--	--	0.3	--	6	--	--
1.8	1.9	4	--	--	0.3	--	6	--	--
2	2.2	4.5	4.2	--	0.3	0.2	6	6	6
2.3	2.5	5	--	--	0.4	0.2	6	6	6
2.5	2.7	5.5	5.1	--	0.4	0.2	6	6	6
2.6	2.8	5.5	--	--	0.4	0.2	6	6	6
3	3.2	6	6.0	--	0.4	0.2	6	6	6
3.5	3.7	7	7.0	--	0.5	0.25	6	6	6
4	4.3	8	8.0	--	0.5	0.25	8	8	8
5x9	5.1	9	--	--	0.5	--	8	--	--
5x10	5.3	10	9.8	--	0.6	0.3	8	8	8
6	6.4	11	11.8	--	0.7	0.4	8	10	10
7	7.4	12.5	--	--	0.8	--	8	--	--
8x14	8.2	14	--	--	0.8	--	8	--	--
8x15	8.4	15	15.3	--	0.8	0.4	8	10	10
10	10.5	18	19.0	--	0.9	0.5	9	10	10
12	12.5	20.5	23.0	--	1.0	0.5	10	10	10
14	14.5	24	26.2	--	1.0	0.6	10	12	12
16	16.5	26	30.2	--	1.2	0.6	12	12	12
18	19	30	--	--	1.4	--	12	--	--
20	21	33	--	--	1.4	--	12	--	--
22	23	36	--	--	1.5	--	14	--	--
24	25	38	--	--	1.5	--	14	--	--
27	28	44	--	--	1.6	--	14	--	--
30	31	48	--	--	1.6	--	14	--	--



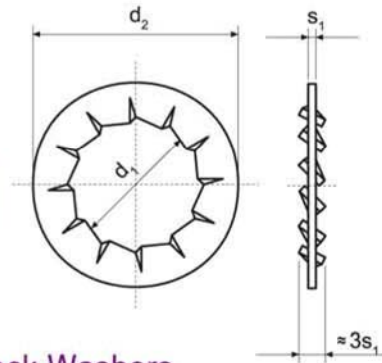
# Retaining Rings

## DIN6798A



Serrated Lock Washers  
External Teeth

## DIN6798J

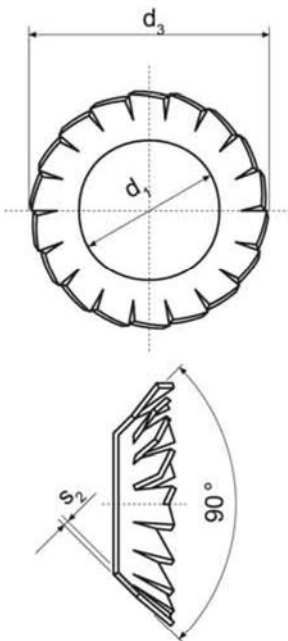



Serrated Lock Washers  
Internal Teeth

## DIN6798V



Countersunk Toothed  
Washers



Catalog No. 	Diameter ( mm )			Thickness ( mm )		Number of Teeth		
	d	d <sub>1</sub>	d <sub>2</sub>	d <sub>3</sub>	S <sub>1</sub>	S <sub>2</sub>	A	J
1.6	1.7	3.6	--	0.3	--	9	7	--
1.7	1.8	3.8	--	0.3	--	9	7	--
1.8	1.9	4	--	0.3	--	9	7	--
2	2.2	4.5	4.2	0.3	0.2	9	7	10
2.3	2.5	5	--	0.4	0.2	9	7	10
2.5	2.7	5.5	5.1	0.4	0.2	9	7	10
2.6	2.8	5.5	--	0.4	0.2	9	7	10
3	3.2	6	6	0.4	0.2	9	7	12
3.5	3.7	7	7	0.5	0.2	10	8	12
4	4.3	8	8	0.5	0.25	11	8	14
5	5.1	9	--	0.5	0.25	11	8	--
5	5.3	10	9.8	0.6	--	11	8	14
6	6.4	11	11.8	0.7	0.3	12	9	16
7	7.4	12.5	--	0.8	0.4	14	10	--
8	8.2	14	--	0.8	--	14	10	--
8	8.4	15	15.3	0.8	0.4	14	10	18
10	10.5	18	19	0.9	0.5	16	12	20
12	12.5	20.5	23	1	0.5	16	12	26
14	14.5	24	26.2	1	0.6	18	14	28
16	16.5	26	30.2	1.2	0.6	18	14	30
18	19	30	--	1.4	--	18	14	--
20	21	33	--	1.4	--	20	16	--
22	23	36	--	1.5	--	20	16	--
24	25	38	--	1.5	--	20	16	--
27	28	44	--	1.6	--	22	18	--
30	31	48	--	1.6	--	22	18	--

# Retaining Rings



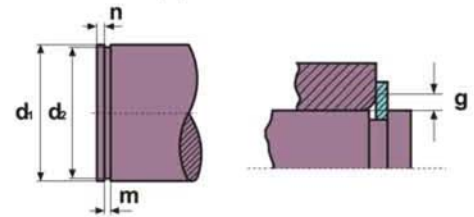
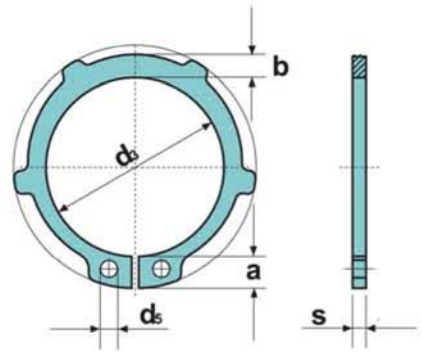
## DIN983

### Material:

Spring steel 65MN  
& Stainless steel

$d_1 \leq 48$  HRC 47-54  
 $48 < d_1 \leq 200$  HRC 44-51  
 $200 < d_1 < 300$  HRC 40-47

Surface: Black, Phosphated,  
Zinc Plated



## Retaining Rings For Shafts

### Type AK

Catalog- No.	Thickness mm		Diameter mm	
	d <sub>1</sub>	s	d <sub>3</sub>	
16	1	0	14.7	
17	1		15.7	+0.10
18	1.2		16.5	-0.36
19	1.2		17.5	
20	1.2		18.5	+0.13
21	1.2		19.5	-0.42
22	1.2		20.5	
23	1.2		21.5	
24	1.2		22.2	
25	1.2		23.2	
26	1.2	24.2	+0.21	
27	1.2	24.9	-0.42	
28	1.5	25.9		
29	1.5	26.9		
30	1.5	27.9		
31	1.5	28.6		
32	1.5	29.6		
33	1.5	30.5	+0.25	
34	1.5	31.5	-0.50	
35	1.5	32.2		
36	1.75	33.2		
37	1.75	34.2		
38	1.75	35.2		
39	1.75	36		
40	1.75	36.5		
41	1.75	37.5		
42	1.75	38.5		
43	1.75	39.5		
44	1.75	40.5	+0.39	
45	1.75	41.5	-0.90	
46	1.75	42.5		
47	1.75	43.5		
48	1.75	44.5		
50	2	0	45.8	
51	2	-0.07	46.8	
52	2		47.8	

Catalog- No.	Thickness mm		Diameter mm	
	d <sub>1</sub>	s	d <sub>3</sub>	
54	2	0	49.8	
55	2		50.8	
56	2		51.8	
57	2		52.8	
58	2		53.8	
60	2		55.8	
62	2		57.8	
63	2		58.8	
65	2.5		60.8	
67	2.5		62.5	+0.46
68	2.5	63.5	-1.10	
70	2.5	65.5		
72	2.5	67.5		
75	2.5	70.5		
77	2.5	72.5		
78	2.5	73.5		
80	2.5	74.5		
82	2.5	76.5		
85	3	0	79.5	
87	3		81.5	
88	3		82.5	
90	3		84.5	
92	3		86.5	
95	3		89.5	
97	3		91.5	
98	3		92.5	
100	3		94.5	
102	4		95	
105	4	98	+0.54	
107	4	100	-1.30	
108	4	101		
110	4	103		
112	4	105		
115	4	108		
117	4	110		
118	4	110		

Catalog- No.	Thickness mm		Diameter mm	
	d <sub>1</sub>	s	d <sub>3</sub>	
120	4	0	113	+0.54
122	4		115	-1.30
125	4		118	
127	4		120	
128	4		120	
130	4		123	+0.63
132	4		125	-1.50
135	4		128	
137	4		130	
138	4		130	
140	4	133		



Kit Packing

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# Retaining Rings



## DIN984

### Material:

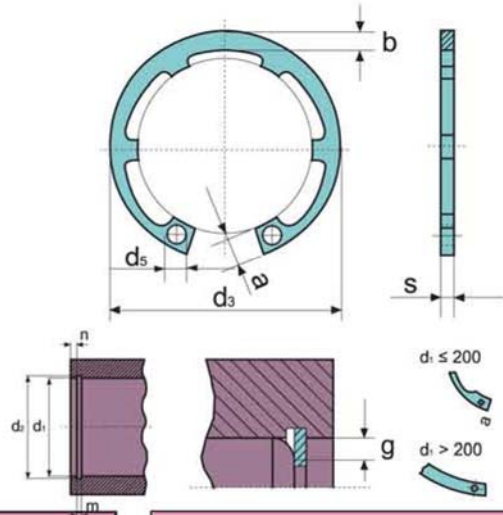
Spring steel 65MN  
& Stainless steel

$d_1 \leq 48$  HRC 47-54  
 $48 < d_1 \leq 200$  HRC 44-51  
 $200 < d_1 < 300$  HRC 40-47

Surface: Black, Phosphated,  
Zinc Plated

## Retaining Rings For Bores

### Type JK



Catalog- No.	Thickness mm	Diameter mm	
$d_1$	$s$	$d_3$	
16	1	17.3	+0.36 -0.10
17	1	18.3	
18	1	19.5	
19	1	20.5	+0.42
20	1	21.5	-0.13
21	1	22.5	
22	1	23.5	
23	1.2	24.6	
24	1.2	25.9	+0.42
25	1.2	26.9	-0.21
26	1.2	27.9	
27	1.2	29.1	
28	1.2	30.1	
29	1.2	31.1	
30	1.2	32.1	
31	1.2	33.4	
32	1.2	34.4	+0.50
33	1.2	35.5	-0.25
34	1.5	36.5	
35	1.5	37.8	
36	1.5	38.8	
37	1.5	39.8	
38	1.5	40.8	
39	1.5	42	
40	1.75	43.5	
41	1.75	44.5	
42	1.75	45.5	+0.90
43	1.75	46.5	-0.39
44	1.75	47.5	
45	1.75	48.5	
46	1.75	49.5	
47	1.75	50.5	
48	1.75	51.5	
49	1.75	52.5	
50	2	54.2	
51	2	55.2	+1.10
52	2	56.2	-0.46
53	2	57.2	
54	2	58.2	
55	2	59.2	
56	2	60.2	
57	2	61.2	

Catalog- No.	Thickness mm	Diameter mm	
$d_1$	$s$	$d_3$	
58	2	62.2	
60	2	64.2	
62	2	66.2	
63	2	67.2	
64	2	68.2	
65	2.5	69.2	+1.10
67	2.5	71.5	-0.46
68	2.5	72.5	
70	2.5	74.5	
72	2.5	76.5	
75	2.5	79.5	
76	2.5	80.5	
77	2.5	82.5	
78	2.5	82.5	
80	2.5	85.5	
82	2.5	87.5	
83	2.5	88.5	
85	3	90.5	
87	3	93.5	
88	3	93.5	
90	3	95.5	
92	3	97.5	+1.30
95	3	100.5	-0.54
97	3	103.5	
98	3	103.5	
100	3	105.5	
102	4	108	
105	4	112	
107	4	115	
108	4	115	
110	4	117	
112	4	119	
115	4	122	
117	4	125	
118	4	125	
120	4	127	
122	4	129	+1.50
125	4	132	-0.63
127	4	135	
128	4	135	
130	4	137	
132	4	139	
135	4	142	

Catalog- No.	Thickness mm	Diameter mm	
$d_1$	$s$	$d_3$	
137	4	145	
138	4	145	
140	4	147	
142	4	149	
145	4	152	
147	4	155	
148	4	155	
150	4	158	+1.50
152*	4	161	-0.63
155	4	164	
157*	4	167	
158*	4	167	
160	4	169	
162*	4	171.5	
165	4	174.5	
167*	4	177.5	
168*	4	177.5	
170	4	179.5	

\* Non standard

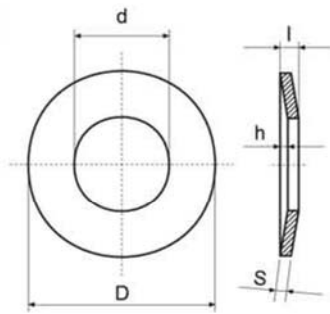
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# Retaining Rings

## DIN2093A / B



Disc Springs



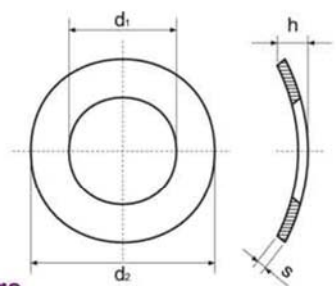
Material: Steel, Stainless Steel  
Surface: Black, Phosphated, Zinc Plated

D mm	d mm	Type A			Type B		
		S	h	l	S	h	l
8	4.2	0.4	0.2	0.6	0.3	0.25	0.55
10	5.2	0.5	0.25	0.75	0.4	0.3	0.7
12.5	6.2	0.7	0.3	1	0.5	0.35	0.85
14	7.2	0.8	0.3	1.1	0.5	0.4	0.9
16	8.2	0.9	0.35	1.25	0.6	0.45	1.05
18	9.2	1	0.4	1.4	0.7	0.5	1.2
20	10.2	1.1	0.45	1.55	0.8	0.55	1.35
22.5	11.2	1.25	0.5	1.75	0.8	0.65	1.45
25	12.2	1.5	0.55	2.05	0.9	0.7	1.6
28	14.2	1.5	0.65	2.15	1	0.8	1.8
31.5	16.3	1.75	0.7	2.45	1.25	0.9	2.15
35.5	18.3	2	0.8	2.8	1.25	1	2.25
40	20.4	2.25	0.9	3.15	1.5	1.15	2.65
45	22.4	2.5	1	3.5	1.75	1.3	3.05
50	25.4	3	1.1	4.1	2	1.4	3.4
56	28.5	3	1.3	4.3	2	1.6	3.6
63	31	3.5	1.4	4.9	2.5	1.75	4.25

## DIN137A



Spring Washers  
Curved



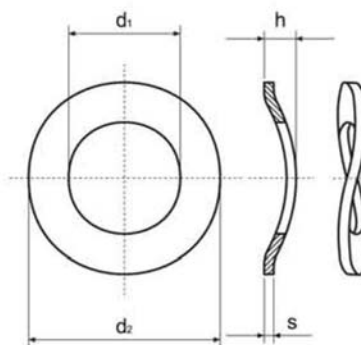
Material: Steel, Stainless Steel  
Surface: Black, Phosphated, Zinc Plated

d mm	d <sub>1</sub> mm	d <sub>2</sub> mm	s	h
2	2.2	4.5	0.3	0.5-1
2.3	2.5	5	0.3	0.5-1
2.5-2.6	2.8	5.5	0.3	0.55-1.1
3	3.2	6	0.4	0.65-1.3
3.5	3.7	7	0.4	0.7-1.4
4	4.3	8	0.5	0.8-1.6
5	5.3	10	0.5	0.9-1.8
6	6.4	11	0.5	1.1-2.2
7	7.4	12	0.5	1.2-2.4
8	8.4	15	0.5	1.7-3.4
10	10.5	18	0.8	2-4

## DIN137B



Spring Washers  
Bowed



Material: Steel, Stainless Steel  
Surface: Black, Phosphated, Zinc Plated

d mm	d <sub>1</sub> mm	d <sub>2</sub> mm	s	h
3	3.2	8	0.5	0.8-1.6
3.5	3.7	8	0.5	0.9-1.8
4	4.3	9	0.5	1-2
5	5.3	11	0.5	1.1-2.2
6	6.4	12	0.5	1.3-2.6
7	7.4	14	0.8	1.5-3
8	8.4	15	0.8	1.5-3
8	8.4	17	0.8	1.7-3.4
10	10.5	18	1	2.1-4.2
10	10.5	21	1	2.1-4.2
12	13	24	1.2	2.5-5
14	15	28	1.6	3-6
16	17	30	1.6	3.2-6.4
18	19	34	1.6	3.3-6.6
20	21	36	1.6	3.7-7.4
22	23	40	1.8	3.9-7.8
24	25	44	1.8	4.1-8.2
27	28	50	2	4.7-9.4
30	31	56	2.2	5-10

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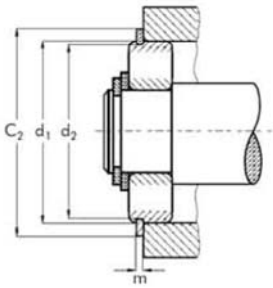


# Retaining Rings

## DIN5417 / M3200 /SP



Material: Steel,  
Stainless Steel  
Surface: Black,  
Phosphated,  
Zinc Plated



d1 mm	s mm	d3 mm	
30	1.12	27.4	+0.4
32	1.12	29.4	
35	1.12	32.4	
37	1.12	34.0	
40	1.12	37.3	+0.5
42	1.12	38.9	
44	1.12	40.9	
47	1.12	43.7	
50	1.12	46.6	-0.1
52	1.12	48.8	
55	1.12	51.7	
56	1.12	52.4	
58	1.12	54.4	+0.8
62	1.70	58.2	
65	1.70	61.2	
68	1.70	63.4	
72	1.70	67.4	+1.8
75	1.70	70.4	

d1 mm	s mm	d3 mm	
80	1.70	75.4	+1.0
85	1.70	80.4	
90	2.46	85.4	
95	2.46	90.4	
100	2.46	95.2	-0.1
110	2.46	105.2	
115	2.46	110.2	
120	2.82	113.6	
125	2.82	118.6	+1.6
130	2.82	123.6	
140	2.82	133.0	
145	2.82	138.0	
150	2.82	142.9	+1.8
160	2.82	152.9	
170	3.10	161.3	
180	3.10	171.2	
190	3.10	181.0	+1.8
200	3.10	191.0	

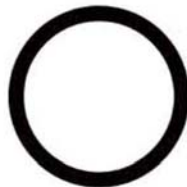
d1 mm	s mm	d3 mm	
210	3.10	200.9	+1.8
215	3.10	205.9	
225	3.50	214.3	
230	3.50	219.2	
240	3.50	229.2	+2.5
250	3.50	239.2	
260	3.50	247.5	
270	3.50	257.5	
280	3.50	267.5	-0.2
290	3.50	277.5	
300	4.50	284.5	
310	4.50	294.0	
320	4.50	304.0	+3.0
340	4.50	324.0	
360	4.50	343.0	
370	4.50	353.0	
380	4.50	363.0	+3.0
400	4.50	383.0	

## DIN988 SS

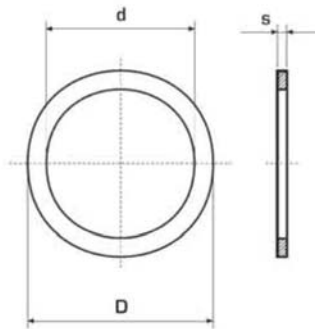


Support Washers

## DIN988 PS

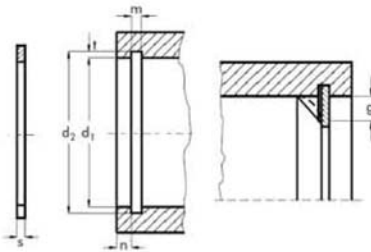


Shim Washers



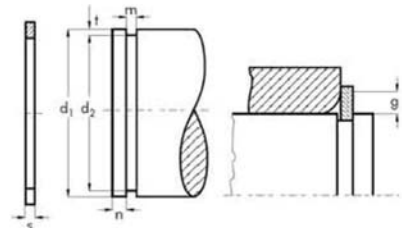
Material: Steel,  
Stainless Steel  
Size: 3mm ~ 170mm  
Surface: Black, Phosphated,  
Zinc Plated

## M1308



Material: Steel,  
Stainless Steel  
Size: 10mm ~ 100mm  
Surface: Black, Phosphated,  
Zinc Plated

## M1408



Material: Steel,  
Stainless Steel  
Size: 10mm ~ 100mm  
Surface: Black, Phosphated,  
Zinc Plated

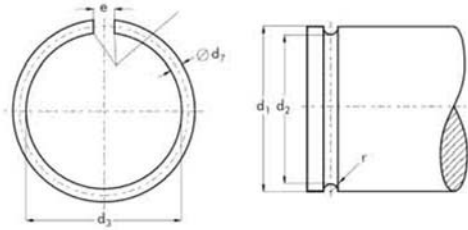
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# Retaining Rings

## DIN7993A



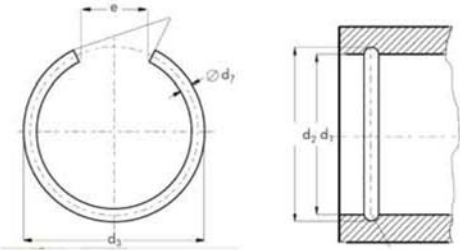
Material: Steel,  
Stainless Steel  
Size: 4mm ~ 38mm  
Surface: Black, Phosphated  
Zinc Plated



## DIN7993B



Material: Steel,  
Stainless Steel  
Size: 7mm ~ 42mm  
Surface: Black, Phosphated  
Zinc Plated



## M2400



Material: Steel,  
Stainless Steel  
Size: 4mm ~ 290mm  
Surface: Black, Phosphated,  
Zinc Plated

## M2300



Material: Steel,  
Stainless Steel  
Size: 7mm ~ 440mm  
Surface: Black, Phosphated

## N1504



Material: Steel,  
Stainless Steel  
Size: 4mm ~ 290mm  
Surface: Black, Phosphated,  
Zinc Plated

## N1500



Material: Steel,  
Stainless Steel  
Size: 3mm ~ 400mm  
Surface: Black, Phosphated  
Zinc Plated

## D1460



Material: Steel,  
Stainless Steel  
Size: 12mm ~ 100mm  
Surface: Black, Phosphated,  
Zinc Plated

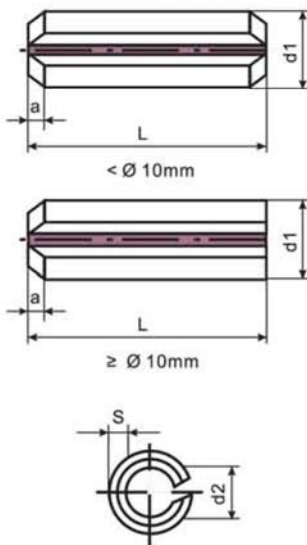


# Pins & Keys

## DIN1481



**Material:**  
Steel, Stainless steel  
**Surface:** Black



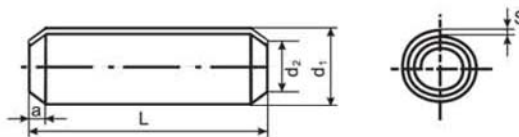
"x" stand for reference,  
the blank have no reference.

Diameter \ Length	1.0	1.5-2.0	2.5	3.0	3.5	4.0	4.5	5.0	6.0	7.0	8.0	10.0	12.0	16.0
4.0	X	X	X	X	X	X								
5.0	X	X	X	X	X	X								
6.0	X	X	X	X	X	X	X	X	X					
8.0	X	X	X	X	X	X	X	X	X					
10.0	X	X	X	X	X	X	X	X	X	X				
12.0	X	X	X	X	X	X	X	X	X	X	X			
14.0	X	X	X	X	X	X	X	X	X	X	X	X	X	X
16.0	X	X	X	X	X	X	X	X	X	X	X	X	X	X
18.0	X	X	X	X	X	X	X	X	X	X	X	X	X	X
20.0	X	X	X	X	X	X	X	X	X	X	X	X	X	X
24.0		X	X	X	X	X	X	X	X	X	X	X	X	X
26.0		X	X	X	X	X	X	X	X	X	X	X	X	X
28.0		X	X	X	X	X	X	X	X	X	X	X	X	X
30.0		X	X	X	X	X	X	X	X	X	X	X	X	X
35.0			X	X	X	X	X	X	X	X	X	X	X	X
40.0			X	X	X	X	X	X	X	X	X	X	X	X
45.0				X	X	X	X	X	X	X	X	X	X	X
50.0				X	X	X	X	X	X	X	X	X	X	X
55.0					X	X	X	X	X	X	X	X	X	X
60.0					X	X	X	X	X	X	X	X	X	X
65.0						X	X	X	X	X	X	X	X	X
70.0							X	X	X	X	X	X	X	X
75.0							X	X	X	X	X	X	X	X
80.0							X	X	X	X	X	X	X	X
85.0							X	X	X	X	X	X	X	X
90.0							X	X	X	X	X	X	X	X
95.0							X	X	X	X	X	X	X	X
100.0							X	X	X	X	X	X	X	X
110.0										X	X	X	X	X
120.0										X	X	X	X	X

## DIN7343



**Material:** Steel,  
Stainless Steel  
**Surface:** Black, Phosphated  
Zinc Plated



D	1.5	2	2.5	3	3.5	4	5	6	8	10	12	14	16
a	0.5	0.7	0.8	1	1.2	1.3	1.7	2	3	3	4	4.5	5
s	0.13	0.17	0.21	0.25	0.29	0.33	0.42	0.5	0.67	0.84	1	1.2	1.3
d <sub>1</sub>	1.62	2.15	2.65	3.15	3.67	4.2	5.25	6.25	8.35	10.45	12.5	14.55	16.55
d <sub>2</sub>	1.4	1.9	2.35	2.85	3.35	3.8	4.8	5.8	7.75	9.6	11.5	13.5	15.4

"L" please see our website.



## DIN6888 Woodruff Keys

**Material:** Steel, Stainless Steel



## DIN6885 Parallel Keys

**Material:** Steel, Stainless Steel

Please visit our website: [www.tjclamp.com](http://www.tjclamp.com)

## U.S. Standard Retaining Rings

**N5000**



Material: Steel, Stainless Steel  
Size: 0.25 ~ 10 inch  
Surface: Black, Phosphated, Zinc Plated

**N5100**



Material: Steel, Stainless Steel  
Size: 0.125 ~ 10 inch  
Surface: Black, Phosphated, Zinc Plated

**N5103**



Material: Steel, Stainless Steel  
Size: 0.125 ~ 2 inch  
Surface: Black, Phosphated, Zinc Plated

**N5115**



Material: Steel, Stainless Steel  
Size: 0.091 ~ 0.995 inch  
Surface: Black, Phosphated, Zinc Plated

**N5133**



Material: Steel, Stainless Steel  
Size: 0.04 ~ 1.375 inch  
Surface: Black, Phosphated, Zinc Plated

**N5144**



Material: Steel, Stainless Steel  
Size: 0.094 ~ 0.562 inch  
Surface: Black, Phosphated, Zinc Plated

**N5402**



Material: Steel, Stainless Steel  
Size: 1.969 ~ 7.874 inch  
Surface: Black, Phosphated, Zinc Plated

Every little correct step lead us to success.

**JIMKOO®**



Packing Method



**Polybag**



**Color Box**



**Oil Paper Rod**



**Plastic Rod**



**Export Carton Box**



**Wooden Pallet**

**BASIC TYPE OF RINGS**



**RINGS FOR RADIAL ASSEMBLY**



**UNIFORM SECTION SANP RINGS**



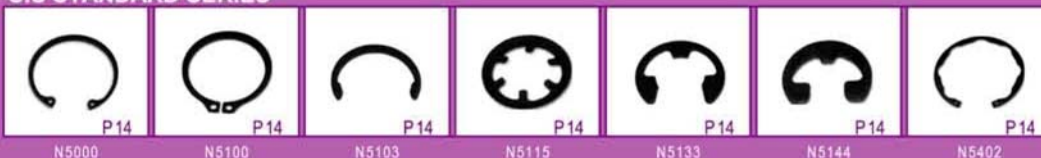
**WAHSHERS SERIES**



**PINS SERIES**



**U.S STANDARD SERIES**



**KEY SERIES**



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