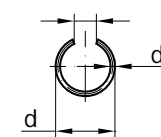
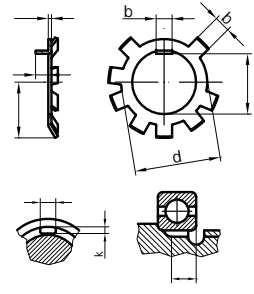


Dimensions for washers and rings



Retaining/lock washers and rings

DIN	Dimensions	10	12	16	18	
7993 B		d ₄	0.8	1	1.6	1.6
	d ₅	10.9	13.2	17.8	19.8	
	e	4	6	8	8	
	for bore Ø d ₁	10	12	16	18	
	Ø d ₆	10.8	13	17.6	19.6	
	r	0.5	0.6	0.9	0.9	

DIN	Dimensions	10	12	14	16	18	20	22	24		
70952 A		a	0.75	0.75	0.75	1	1	1	1	1	
		b ₁	4	4	4	5	5	5	6	6	
		b ₂	4	4	5	5	5	5	6	6	
		c	3	3	3	3	4	4	4	4	
		d ₂	16	18	20	23	25	27	30	32	
		e	11	12	13	14.5	16.5	17.5	19	20	
		f	8.9	10.9	12.9	14.9	16.9	18.9	20.9	22.9	
		g shaft *	4	4	5	5	5	5	6	6	
		h shaft	3	3	3	3	4	4	4	4	
		k shaft	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	
		Dimensions		26	28	30	32	35	38	40	42
		a	1	1	1.2	1.2	1.2	1.2	1.2	1.2	1.2
	b ₁	6	6	6	6	6	6	6	6	7	
	b ₂	6	7	7	7	7	7	8	8	8	
	c	5	5	5	5	5	5	5	5	5	
	d ₂	34	36	38	41	43	47	49	52		
	e	22	23	24	25.5	26.5	28.5	29.5	31		
	f	24.9	26.9	28.9	30.9	33.9	36.6	38.6	40.6		
	g shaft *	6	7	7	7	7	8	8	8		
	h shaft	5	5	5	5	5	5	5	5		
	k shaft	1.2	1.5	1.5	1.5	1.5	1.5	1.5	1.5		
	Dimensions		45	48	50	52	55	60	65	70	
	a	1.2	1.2	1.2	1.2	1.2	1.2	1.5	1.5	1.5	
	b ₁	7	7	7	7	7	7	10	10	10	
	b ₂	8	8	8	8	8	10	10	10	10	
	c	5	5	5	6	6	6	6	6		
	d ₂	54	57	60	62	67	71	76	81		
	e	32	33.5	35	37	39.5	41.5	44	46.5		
	f	43.6	46.7	48.7	50.7	53.7	58.7	63.7	68.7		
	g shaft *	8	8	8	8	10	10	10	10		
	h shaft	5	5	5	6	6	6	6	6		
	k shaft	1.5	1.5	1.5	1.5	1.5	2	2	2		
	Dimensions		75	80	90	100	115	120	130		
	a	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5		
	b ₁	10	10	10	10	11	11	11	11		
	b ₂	10	10	10	12	12	12	12	12		
c	7	7	7	8	8	8	10				
d ₂	86	91	103	116	133	138	148				
e	50	52.5	58.5	66	74.5	77	84				
f	73.2	78.2	88.2	98.2	113.3	118.3	128.3				
g shaft *	10	10	10	12	12	12	12				
h shaft	7	7	7	8	8	8	10				
k shaft	2	2	2	2	2	2	2				

* tolerance C11 on the shaft