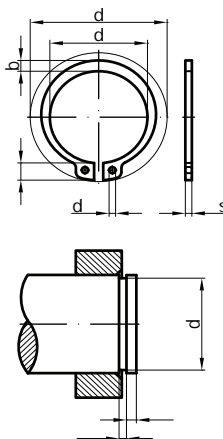




Dimensions for washers and rings

Retaining/lock washers and rings

DIN	Dimensions	3	4	5	6	7	8	9	10	11	12	13
	s	0.4	0.4	0.6	0.7	0.8	0.8	1	1	1	1	1
	d ₃	2.7	3.7	4.7	5.6	6.5	7.4	8.4	9.3	10.2	11	11.9
	a	1.9	2.2	2.5	2.7	3.1	3.2	3.3	3.3	3.3	3.3	3.4
	b	0.8	0.9	1.1	1.3	1.4	1.5	1.7	1.8	1.8	1.8	2
	d ₅	1	1	1	1.2	1.2	1.2	1.2	1.5	1.5	1.7	1.7
	d ₂	2.8	3.8	4.8	5.7	6.7	7.6	8.6	9.6	10.5	11.5	12.4
	m	0.5	0.5	0.7	0.8	0.9	0.9	1.1	1.1	1.1	1.1	1.1
	n	0.3	0.3	0.3	0.5	0.5	0.6	0.6	0.6	0.8	0.8	0.9
	d ₄	7	8.6	10.3	11.7	13.5	14.7	16	17	18	19	20.2
Dimensions	14	15	16	17	18	19	20	21	22	23 *	24	
	s	1	1	1	1	1.2	1.2	1.2	1.2	1.2	1.2	1.2
	d ₃	12.9	13.8	14.7	15.7	16.5	17.5	18.5	19.5	20.5	21.5	22.2
	a	3.5	3.6	3.7	3.8	3.9	3.9	4	4.1	4.2	4.3	4.4
	b	2.1	2.2	2.2	2.3	2.4	2.5	2.6	2.7	2.8	2.9	3
	d ₅	1.7	1.7	1.7	1.7	2	2	2	2	2	2	2
	d ₂	13.4	14.3	15.2	16.2	17	18	19	20	21	22	22.9
	m	1.1	1.1	1.1	1.1	1.3	1.3	1.3	1.3	1.3	1.3	1.3
	n	0.9	1.1	1.2	1.2	1.5	1.5	1.5	1.5	1.5	1.5	1.7
	d ₄	21.4	22.6	23.8	25	26.2	27.2	28.4	29.6	30.8	-	33.2
Dimensions	25	26	27 *	28	29	30	31 *	32	33 *	34	35	
	s	1.2	1.2	1.2	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
	d ₃	23.2	24.2	24.9	25.9	26.9	27.9	28.6	29.6	30.5	31.5	32.2
	a	4.4	4.5	4.6	4.7	4.8	5	5.1	5.2	5.2	5.4	5.6
	b	3	3.1	3.1	3.2	3.4	3.5	3.5	3.6	3.7	3.8	3.9
	d ₅	2	2	2	2	2	2	2.5	2.5	2.5	2.5	2.5
	d ₂	23.9	24.9	25.6	26.6	27.6	28.6	29.3	30.3	31.3	32.3	33
	m	1.3	1.3	1.3	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6
	n	1.7	1.7	2.1	2.1	2.1	2.1	2.6	2.6	2.6	2.6	3
	d ₄	34.2	35.5	-	37.9	39.1	40.5	-	43	-	45.4	46.8
Dimensions	36	37 *	38	39 *	40	41 *	42	44 *	45	46 *	47 *	
	s	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75
	d ₃	33.2	34.2	35.2	36	36.5	37.5	38.5	40.5	41.5	42.5	43.5
	a	5.6	5.7	5.8	5.9	6	6.2	6.5	6.6	6.7	6.7	6.8
	b	4	4.1	4.2	4.3	4.4	4.5	4.5	4.6	4.7	4.8	4.9
	d ₅	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
	d ₂	34	35	36	37	37.5	38.5	39.5	41.5	42.5	43.5	44.5
	m	1.85	1.85	1.85	1.85	1.85	1.85	1.85	1.85	1.85	1.85	1.85
	n	3	3	3	3	3.8	3.8	3.8	3.8	3.8	3.8	3.8
	d ₄	47.8	-	50.2	-	52.6	-	55.7	-	59.1	-	-
Dimensions	48	50	52	54 *	55	56	57 *	58	60	62	63	
	s	1.75	2	2	2	2	2	2	2	2	2	2
	d ₃	44.5	45.8	47.8	49.8	50.8	51.8	52.8	53.8	55.8	57.8	58.8
	a	6.9	6.9	7	7.1	7.2	7.3	7.3	7.3	7.4	7.5	7.6
	b	5	5.1	5.2	5.3	5.4	5.5	5.5	5.6	5.8	6	6.2
	d ₅	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
	d ₂	45.5	47	49	51	52	53	54	55	57	59	60
	m	1.85	2.15	2.15	2.15	2.15	2.15	2.15	2.15	2.15	2.15	2.15
	n	3.8	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
	d ₄	62.5	64.5	66.7	-	70.2	71.6	-	73.6	75.6	77.8	79
Dimensions	65	67 *	68	70	72	75	77 *	78	80	82	85	
	s	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	3	3
	d ₃	60.8	62.5	63.5	65.5	67.5	70.5	72.5	73.5	74.5	76.5	79.5
	a	7.8	7.9	8	8.1	8.2	8.4	8.5	8.6	8.6	8.7	8.7
	b	6.3	6.4	6.5	6.6	6.8	7	7.2	7.3	7.4	7.6	7.8
	d ₅	3	3	3	3	3	3	3	3	3	3	3.5
	d ₂	62	64	65	67	69	72	74	75	76.5	78.5	81.5
	m	2.65	2.65	2.65	2.65	2.65	2.65	2.65	2.65	2.65	2.65	3.15
	n	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	5.3	5.3	5.3
	d ₄	81.4	-	84.8	87	89.2	92.7	-	96.1	98.1	100.3	103.3
Dimensions	87 *	88	90	92 *	95	97 *	98 *	100	102 *	105	107 *	
	s	3	3	3	3	3	3	3	4	4	4	4
	d ₃	81.5	82.5	84.5	86.5	89.5	91.5	91.5	94.5	95	98	100
	a	8.8	8.8	8.8	9	9.4	9.4	9.4	9.6	9.7	9.9	10
	b	7.9	8	8.2	8.4	8.6	8.8	8.8	9	9.2	9.3	9.5
	d ₅	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
	d ₂	83.5	84.5	86.5	88.5	91.5	93.5	94.5	96.5	98	101	103
	m	3.15	3.15	3.15	3.15	3.15	3.15	3.15	3.15	4.15	4.15	4.15
	n	5.3	5.3	5.3	5.3	5.3	5.3	5.3	6	6	6	6
	d ₄	-	106.5	108.5	-	114.8	-	-	120.2	-	125.8	-



471
normal
type

nominal size = for shafts Ø
 *intermediate sizes not included in the standard