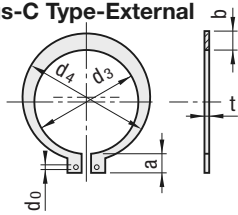


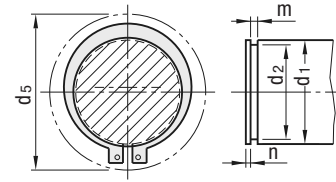
# [Technical Data] Retaining Rings C Type

Excerpts from JIS B 2804(2001)

## 1. Retaining Rings-C Type-External

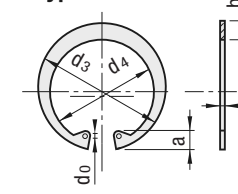


The hole with diameter  $d_0$  should be so positioned to protrude out of the groove when the retaining ring is inserted in the shaft.

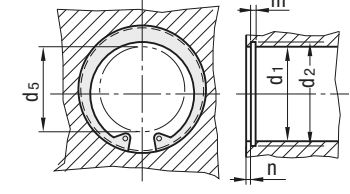


$d_5$  is the max. outer diameter when the retaining ring is fitted onto the shaft.

## 2. Retaining Rings-C Type-Internal



The hole with diameter  $d_0$  should be so positioned to protrude out of the groove when the retaining ring is inserted in the hole.



$d_5$  is the minimum diameter of the internal circumference when the retaining ring is fitted.

### Retaining Rings-C Type-External

Unit: mm

Nominal <sup>(1)</sup>	Retaining Rings						Applicable Shaft (Reference)								
	Reference Dimension	Tolerance	Reference Dimension	Tolerance	(Approx.)	(Approx.)	(Min.)	$d_5$	$d_1$	Reference Dimension	Tolerance	Reference Dimension	Tolerance	(Min.)	
10	9.3	±0.15	1	±0.05	1.6	3	1.2	17	10	9.6	-0.09	1.15	0	-0.11	
(11)	10.2							18	11	10.5					
12	11.1	1.8			3.1	19	12	11.5							
(13)	12	1.8			3.3	20	13	12.4							
14	12.9	2			3.4	22	14	13.4							
15	13.8	2.1			3.5	23	15	14.3							
16	14.7	2.2			3.6	24	16	15.2							
17	15.7	2.2			3.7	25	17	16.2							
18	16.5	2.6			3.8	26	18	17							
(19)	17.5	2.7			3.8	27	19	18							
20	18.5	1.2	±0.06	2.7	3.9	2	1.5	28	20	19	0	-0.21	1.35	0	-0.21
(21)	19.5							2.7	4	30					
22	20.5			2.7	4.1	31	22	21							
(24)	22.2			3.1	4.2	33	24	22.9							
25	23.2			3.1	4.3	34	25	23.9							
(26)	24.2			3.1	4.4	35	26	24.9							
28	25.9			3.1	4.6	38	28	26.6							
(29)	26.9			3.5	4.7	39	29	27.6							
30	27.9			3.5	4.8	40	30	28.6							
32	29.6			3.5	5	43	32	30.3							
(34)	31.5	1.6 <sup>(?)</sup>	±0.06	4	5.3	2	1.5	45	34	32.3	0	-0.25	1.75	0	-0.25
35	32.2							4	5.4	46					
(36)	33.2			4	5.4	47	36	34							
(38)	35.2			4.5	5.6	50	38	36							
40	37			4.5	5.8	53	40	38							
(42)	38.5			4.5	6.2	55	42	39.5							
45	41.5			4.8	6.3	58	45	42.5							
(48)	44.5			4.8	6.5	62	48	45.5							
50	45.8			5	6.7	64	50	47							
(52)	47.8			5	6.8	66	52	49							
55	50.8	1.8	±0.07	5	7	2	1.5	70	55	52	0	-0.25	1.95	0	-0.25
(56)	51.8							5	7	71					
(58)	53.8			5.5	7.1	73	58	55							
60	55.8			5.5	7.2	75	60	57							
(62)	57.8			5.5	7.2	77	62	59							
(63)	58.8			5.5	7.3	78	63	60							
65	60.8			6.4	7.4	81	65	62							
(68)	63.5			6.4	7.8	84	68	65							
70	65.5			6.4	7.8	86	70	67							
(72)	67.5			7	7.9	88	72	69							
75	70.5	2.5	±0.08	7	7.9	2	1.5	92	75	72	0	-0.3	2.7	0	-0.3
(78)	73.5							7	7.9	95					
80	74.5			7.4	8.1	97	80	76.5							
				7.4	8.2										

Note<sup>(1)</sup>: Priority should be given to values other than included in ( ). A value in ( ) may be used if necessary.

Note<sup>(2)</sup>: For thickness  $t = 1.6$ mm, the value of 1.5mm may be substituted for on the right side of the formula, for the time being. In this case,  $m$  must be 1.65mm.

Reference: 1. The minimum width of the ring of the retaining ring should be less than the plate thickness  $t$ .

2. The recommended dimensions of the applicable shaft are given here for reference.

3.  $d_4$  (mm) should preferably be equal to  $d_4 = d_3 + (1.4 \sim 1.5)b$ .

Reference: The thickness  $t$ , conforms to the Japan Spring Manufacturers Association Standard, JSMA No. 6-1976 (steel belt for a spring).

### Retaining Rings-C Type-Internal

Unit: mm

Nominal <sup>(1)</sup>	Retaining Rings						Applicable Shaft (Reference)							
	Reference Dimension	Tolerance	Reference Dimension	Tolerance	(Approx.)	(Approx.)	(Min.)	$d_5$	$d_1$	Reference Dimension	Tolerance	Reference Dimension	Tolerance	(Min.)
10	10.7	±0.18	1	±0.05	1.8	3.1	1.2	3	10	10.4	0	1.15	+0.11	0
11	11.8							4	11	11.4				
12	13				1.8	3.3	5	12	12.5					
(13)	14.1				1.8	3.5	6	13	13.6					
14	15.1				2	3.6	7	14	14.6					
15	16.2				2	3.6	8	15	15.7					
16	17.3				2	3.7	8	16	16.8					
(17)	18.3				2	3.8	9	17	17.8					
18	19.5				2.5	4	10	18	19					
19	20.5				2.5	4	11	19	20					
20	21.5	±0.2	1.2	±0.06	2.5	4	2	12	20	21	0	1.35	+0.21	0
(21)	22.5							2.5	4.1	12				
22	23.5				2.5	4.1	13	22	23					
(24)	25.9				2.5	4.3	15	24	25.2					
25	26.9				3	4.4	16	25	26.2					
(26)	27.9				3	4.6	16	26	27.2					
28	30.1				3	4.6	18	28	29.4					
30	32.1				3	4.7	20	30	31.4					
32	34.4				3.5	5.2	21	32	33.7					
(34)	36.5				3.5	5.2	23	34	35.7					
35	37.8	±0.25	1.6 <sup>(?)</sup>	±0.06	3.5	5.2	2	24	35	37	0	1.75	+0.25	0
(36)	38.8							3.5	5.2	25				
37	39.8				3.5	5.2	26	37	39					
(38)	40.8				4	5.3	27	38	40					
40	43.5				4	5.7	28	40	42.5					
42	45.5				4	5.8	30	42	44.5					
45	48.5				4.5	5.9	33	45	47.5					
47	50.5				4.5	6.1	34	47	49.5					
(48)	51.5				4.5	6.2	35	48	50.5					
50	54.2				4.5	6.5	37	50	53					
52	56.2	±0.4	1.8	±0.07	5.1	6.5	2	39	52	55	0	1.95	+0.25	0
55	59.2							5.1	6.5	41				
(56)	60.2				5.1	6.6	42	56	59					
58	62.2				5.1	6.8	44	58	61					
60	64.2				5.5	6.8	46	60	63					
(62)	66.2				5.5	6.9	48	62	65					
63	67.2				5.5	6.9	49	63	66					
(65)	69.2				5.5	7	50	65	68					
68	72.5				6	7.4	53	68	71					
(70)	74.5				6	7.4	55	70	73					
72	76.5	±0.45	2	±0.08	6.6	7.4	2	57	72	75	0	2.2	+0.3	0
62	66.2							6.6	7.8	60				
75	79.5				6.6	7.8	62	78	81					
(78)	82.5				6.6	8	62	78	81					
80	85.5				7	8	64	80	83.5					
					7	8								

Note<sup>(1)</sup>: Priority should be given to values other than included in ( ). A value in ( ) may be used if necessary.

Note<sup>(2)</sup>: For thickness  $t = 1.6$ mm, the value of 1.5mm may be substituted for on the right side of the formula, for the time being. In this case,  $m$  must be 1.65mm.

Reference: 1. The minimum width of the ring of the retaining ring should be less than the plate thickness  $t$ .

2. The recommended dimensions of the applicable shaft are given here for reference.

3.  $d_4$  (mm) should preferably be equal to  $d_4 = d_3 - (1.4 \sim 1.5)b$ .

Reference: The thickness  $t$ , conforms to the Japan Spring Manufacturers Association Standard, JSMA No. 6-1976 (steel belt for a spring).