



Material: Carbon Spring Steel

Finish: Phosphating or as per Requirements

Hardness: d1 - 3 to 47mm : 47 to 54 HRC

d1 - 48 to 200mm : 44 to 51 HRC

d1 - 200 to 300mm : 39 to 47 HRC

shall Dia, d1 Nom. Size	Circlips							Groove				
	s		d3		a	b ^d	d ₅	d2t		mt	t	n
	Size	Tolerance	Size	Tolerance	Max.	⌀	Min.	size	Tolerance	H13		Min
3	0.4	± 0.02	2.7	+0.04 -0.15	1.9	0.8	1	2.8	0+0.04 (H10)	0.5	0.1	0.3
4	0.4		3.7		2.2	0.9	1	3.8	0-0.048 (H10)	0.5	0.1	0.3
5	0.6	± 0.03	4.7	+0.06 -0.18	2.5	1.1	1	4.8	0-0.06 (H10)	0.7	0.1	0.3
6	0.7		5.6		2.7	1.3	1.2	5.7		0.8	0.15	0.5
7	0.8		6.5		3.1	1.4	1.2	6.7		0.9	0.15	0.5
8	0.8	± 0.04	7.4	+0.10 -0.36	3.2	1.5	1.2	7.6	0-0.11 (H11)	0.9	0.2	0.6
9	1		8.4		3.3	1.7	1.2	8.6		1.1	0.2	0.6
10	1		9.3		3.3	1.8	1.5	9.6		1.1	0.2	0.6
11	1		10.2		3.3	1.8	1.5	10.5		1.1	0.25	08
12	1		11		3.3	1.8	1.7	11.5		1.1	0.25	09
13	1		11.9		3.4	2	1.7	12.4		1.1	0.3	0.9
14	1		12.9		3.5	2.1	1.7	13.4		1.1	0.3	0.9
15	1		13.8		3.6	2.2	1.7	14.3		1.1	0.35	1.1
16	1		14.7		3.7	2.3	1.7	15.2		1.1	0.4	1.2
17	1		15.7		3.8	2.3	1.7	16.2		1.1	0.4	1.2
18	1.2	± 0.04	16.5	+0.13 -0.42	3.9	2.4	2	17	0-0.13 (H11)	1.3	0.5	1.5
19	1.2		17.5		3.9	2.5	2	18		1.3	0.5	1.5
20	1.2		18.5		4	2.6	2	19		1.3	0.5	1.5
21	1.2	± 0.05	19.5	+0.41 -0.42	4.1	2.7	2	20	0-0.21 (H12)	1.3	0.5	1.5
22	1.2		20.5		4.2	2.8	2	21		1.3	0.5	1.5
24	1.2		22.2		4.4	3	2	22.9		1.3	0.55	1.7
25	1.2		23.2		4.4	3	2	24.9		1.3	0.55	1.7
26	1.2		24.2		4.5	3.1	2	24.9		1.3	0.55	1.7
28	1.5		25.9		4.7	3.2	2	26.6		1.6	0.7	2.1
29	1.5		26.9		4.8	3.4	2	27.6		1.6	0.7	2.1
30	1.5		27.9		5	3.5	2	28.6		1.6	0.7	2.1
32	1.5		29.6		5.2	3.6	2.5	30.3		1.6	0.85	2.6
34	1.5		31.5		5.4	3.8	2.5	31.3		1.6	0.85	2.6



shall Dia, d1 Nom. Size	Circlips							Groove				
	s		d3		a	b ^d	d	d2t		mt	t	n
	Size	Tolerance	Size	Tolerance	Max.	±	Min.	size	Tolerance	H13		Min
35	1.5	± 0.05	32.2	+0.25 -0.5	5.6	3.9	2.5	33	0-0.25 (H12)	1.6	1	3
36	1.75		33.2		5.6	4	2.5	34		1.85	1	3
38	1.75		35.2		5.8	4.2	2.5	36		1.85	1	3
40	1.75		36.5	+0.39 -0.9	6	4.4	2.5	37.5		1.85	1.25	3.8
42	1.75		38.5		6.5	4.5	2.5	39.5		1.85	1.25	3.8
45	1.75		41.5		5.7	4.7	2	52.5		1.85	1.25	3.8
48	1.75		44.5		6.9	5	2.5	45.5		1.85	1.25	3.8
50	2		45.8		7	5.1	2.5	47		2.15	1.5	4.5
52	2	±0.06	47.8	+0.46 -1.1	7.2	5.2	2.5	49	0-0.30 (H12)	2.15	1.5	4.5
55	2		50.8		7.3	5.4	2.5	52		2.15	1.5	4.5
56	2		51.8		7.3	5.5	2.5	53		2.15	1.5	4.5
58	2		53.8		7.4	5.6	2.5	55		2.15	1.5	4.5
60	2		55.8		7.5	5.8	2.5	57		2.15	1.5	4.5
62	2		57.8		7.6	6	2.5	59		2.15	1.5	4.5
63	2		58.8		7.8	6.2	2.5	60		2.15	1.5	4.5
65	2.5		60.8		7.8	6.3	3	62		2.65	1.5	4.5
68	2.5		63.5		8	6.5	3	65		2.65	1.5	4.5
70	2.5		65.5		+0.46 -1.1	8.1	6.6	3		67	0 -0. (H12)	2.65
72	2.5	67.5	8.2	6.8		3	69	2.65	1.5	4.5		
75	2.5	70.5	8.4	7		3	72	2.65	1.5	4.5		
78	2.5	73.5	8.6	7.3		3	75	2.65	1.5	4.5		
80	2.5	74.5	8.6	7.4		3	76.5	2.65	1.75	5.3		
82	2.5	76.5	8.7	7.6		3	78.5	2.65	1.75	5.3		
85	3	79.5	8.7	7.8		3.5	81.5	2.15	1.75	5.3		
88	3	82.5	+0.54 -1.3	8.7		8	3.5	84.5	0 -0.35 (H12)	3.15		1.75
90	3	84.5		8.8	8.2	3.5	86.5	3.15		1.75	5.3	
95	3	89.5		9.4	8.6	3.5	91.5	3.15		1.75	5.3	
100	3	94.5		9.6	9	3.5	96.5	3.15		1.75	5.3	
105	4	98		9.9	9.3	3.5	101	0 -0.54 (H13)		4.15	2	6
110	4	103		10.1	9.6	3.5	106			4.15	2	6
115	4	108		10.6	9.8	3.5	111			4.15	2	6
120	4	113		11	10.2	3.5	116			4.15	2	6
125	4	118	11.4	10.4	4	121	4.15		2	6		
130	4	123	11.6	10.7	4	126	4.15		2	6		
135	4	128	11.8	11	4	131	4.15		2	6		
140	4	133	12	11.2	4	136	4.15		2	6		
145	4	± 0.8	138	+0.63 -1.5	12.2	11.5	4	141	0 -0.63 (H13)	4.15	2	6
150	4		142		13	11.8	4	145		4.15	2.5	7.5
155	4		146		13	12	4	150		4.15	2.5	7.5
160	4		151		13.3	12.2	4	155		4.15	2.5	7.5
165	4		155.5		13.5	12.5	4	160		4.15	2.5	7.5
170	4		160.5		13.5	12.9	4	165		4.15	2.5	7.5
175	4		165.5		13.5	12.9	4	170		4.15	2.5	7.5
180	4		170.5		14.2	13.5	4	175		4.15	2.5	7.5
185	4		175.5		14.2	13.5	4	180		4.15	2.5	7.5
190	4		180.5		14.2	14	4	185		4.15	2.5	7.5



shall Dia, d1 Nom. Size	Circlips							Groove				
	s		d3		a	b ^d	d ₅	d2t		mt	t	n
	Size	Tolerance	Size	Tolerance	Max.	r	Min.	size	Tolerance	H13		Min
195	4	± 0.9	185.5	+0.72 -1.7	14.2	14	4	190	0 -0.81 (H13)	4.15	2.5	7.5
200	4		190.5		14.2	14	4	195		4.15	2.5	7.5
210	5		198		14.2	14	4	204		5.15	3	9
220	5		208		14.2	14	4	214		5.15	3	9
230	5		218		14.2	14	4	224		5.15	3	9
240	5		228		14.2	14	4	234		5.15	3	9
250	5		238		14.2	14	4	244		5.15	3	9
260	5		245	+0.13 -0.42	16.2	16	5	252	0 -0.11 (H11)	5.15	4	12
270	5		255		16.2	16	5	262		5.15	4	12
280	5		265		16.2	16	5	272		5.15	4	12
290	5		275		16.2	16	5	282		5.15	4	12
300	5		285		16.2	16	5	292		5.15	4	12

Heavy Pattern: IS 3075

15	1.5	± 0.5	13.8	+0.25 -0.5	4.8	2.4	2	14.3	0 -0.13 (H11)	1.6	0.35	1.1
16	1.5		14.7		5	2.5	2	15.2		1.6	0.4	1.2
17	1.5		15.7		5	2.6	2	16.2		1.6	0.4	1.2
18	1.5		16.5	5.1	2.7	2	17	1.6		0.5	1.5	
20	1.75		18.5	5.5	3	2	19	1.85		0.5	1.5	
22	1.75		20.5	6	3.1	2	21	1.85		0.5	1.5	
24	1.75	22.2	± 0.6	+0.39 -0.9	6.3	3.2	2	22.9	0 -0.21 (H12)	1.85	0.55	1.7
25	2	23.2			6.4	3.4	2	23.9		2.15	0.55	1.7
28	2	25.9			6.5	3.5	2	26.9		2.15	0.7	2.1
30	2	27.9			6.5	4.1	2	28.6		2.15	0.7	2.1
32	2	29.6			6.5	4.1	2.5	30.3		2.15	0.85	2.6
34	2.5	31.5			6.6	4.2	2.5	32.3		2.65	0.85	2.6
35	2.5	32.2	± 0.7	+0.46 -1.1	6.7	4.2	2.5	33	0 -0.25 (H12)	2.65	1	3
38	2.5	35.2			6.8	4.3	2.5	36		2.65	1	3
40	2.5	36.5			7	4.4	2.5	37.5		2.65	1.25	3.8
42	2.5	38.5			7.2	4.5	2.5	39.5		2.65	1.25	3.8
45	2.5	41.5			7.5	4.7	2.5	42.5		2.65	1.25	3.8
48	2.5	44.5			7.8	5	2.5	45.5		2.65	1.25	3.8
50	3	45.8	± 0.8	+0.54 -1.3	8	5.1	2.5	47	0 -0.30 (H12)	3.15	1.5	4.5
52	3	47.8			8.2	5.2	2.5	49		3.15	1.5	4.5
55	3	50.8			8.5	3.4	2.5	52		3.15	1.5	4.5
58	3	53.8			8.8	5.6	2.5	55		3.15	1.5	4.5
60	3	55.8			9	5.8	2.5	57		3.15	1.5	4.5
65	4	60.8			9.3	6.3	3	62		4.15	1.5	4.5
70	4	65.5	9.5	6.6	3	67	4.15	1.5	4.5			
75	4	70.5	9.7	7	3	72	4.15	1.5	4.5			
80	4	74.5	9.8	7.4	3	76.5	4.15	1.75	5.3			
85	4	79.5	10	7.8	3.5	81.5	4.15	1.75	5.3			
90	4	84.5	10.2	8.2	3.5	86.5	4.15	1.75	5.3			
100	4	94.5	10.5	9	3.5	96.5	4.15	1.75	5.3			