

Conical Disc Springs of Series A (with $\frac{D_o}{t} = 18$; $\frac{h_o}{t} = 0.4$, $E = 206\ 000\ \text{N/mm}^2$, and $\mu = 0.3$)

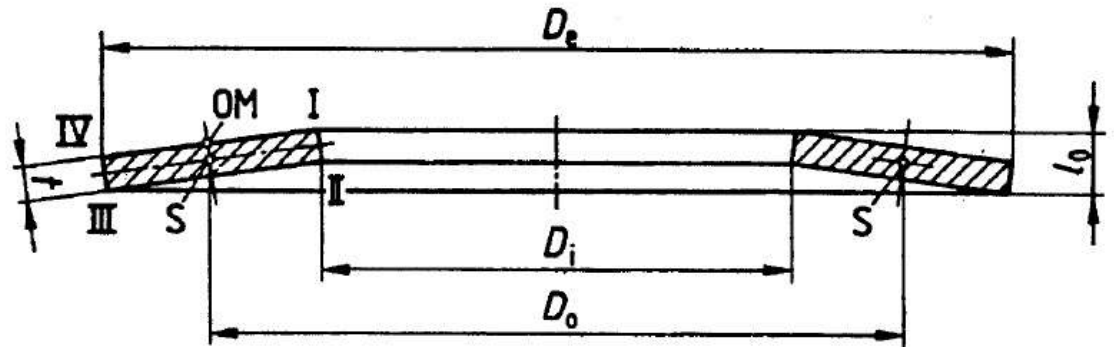
(Foreword, and Clause 6)

Group	D_e	D_i	t or $(t^{-1})^b$	h_o	l_o	F	s	$l_o \cdot s$	$\sigma_{OM}^{2)}$	$\sigma_{II}^{3)}$ σ_{III}	
	h_{12}	H_{12}				N	(where $s \approx 0.75 h_o$)		N/mm ²	N/mm ²	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	
1	8	4.2	0.4	0.2	0.6	210	0.15	0.45	-1 200	1 220*	
	10	5.2	0.5	0.25	0.75	329	0.19	0.56	-1 210	1 240*	
	12.5	6.2	0.7	0.3	1	673	0.23	0.77	-1 280	1 420*	
	14	7.2	0.8	0.3	1.1	813	0.23	0.87	-1 190	1 340*	
	16	8.2	0.9	0.35	1.25	1 000	0.26	0.99	-1 160	1 290*	
	18	9.2	1	0.4	1.4	1 250	0.3	1.1	-1 170	1 300*	
	20	10.2	1.1	0.45	1.55	1 530	0.34	1.21	-1 180	1 300*	
	22.5	11.2	1.25	0.5	1.75	1 950	0.38	1.37	-1 170	1 320*	
	25	12.2	1.5	0.55	2.05	2 910	0.41	1.64	-1 210	1 410*	
	28	14.2	1.5	0.65	2.15	2 850	0.49	1.66	-1 180	1 280*	
	31.5	16.3	1.75	0.7	2.45	3 900	0.53	1.92	-1 190	1 310*	
	35.5	18.3	2	0.8	2.8	5 190	0.6	2.2	-1 210	1 330*	
	40	20.4	2.25	0.9	3.15	6 540	0.68	2.47	-1 210	1 340*	
	45	22.4	2.5	1	3.5	7 720	0.75	2.75	-1 150	1 300*	
2	50	25.4	3	1.1	4.1	12 000	0.83	3.27	-1 250	1 430*	
	56	28.5	3	1.3	4.3	11 400	0.98	3.32	-1 180	1 280*	
	63	31	3.5	1.4	4.9	15 000	1.05	3.85	-1 140	1 300*	
	71	36	4	1.6	5.6	20 500	1.2	4.4	-1 200	1 330*	
	80	41	5	1.7	6.7	33 700	1.28	5.42	-1 260	1 460*	
	90	46	5	2	7	31 400	1.5	5.5	-1 170	1 300*	
	100	51	6	2.2	8.2	48 000	1.65	6.55	-1 250	1 420*	
	112	57	6	2.5	8.5	43 800	1.88	6.62	-1 130	1 240*	
	3	125	64	8(7.5)	2.6	10.6	85 900	1.95	8.65	-1 280	1 330*
		140	72	8(7.5)	3.2	11.2	85 300	2.4	8.8	-1 260	1 280*
160		82	10(9.4)	3.5	13.5	139 000	2.63	10.87	-1 320	1 340*	
180		92	10(9.4)	4	14	125 000	3	11	-1 180	1 200	
200		102	12(11.25)	4.2	16.2	183 000	3.15	13.05	-1 210	1 230*	
225		112	12(11.25)	5	17	171 000	3.75	13.25	-1 120	1 140	
250		127	14(13.1)	5.6	19.6	249 000	4.2	15.4	-1 200	1 220	

Conical Disc Springs of Series B (with $\frac{D_o}{t} = 28$; $\frac{h_o}{t} = 0.75$, $E = 206\ 000\ \text{N/mm}^2$, and $\mu = 0.3$)

Group	D_o	D_i	t or $(t^{-1})^{11}$	h_o	l_o	F	s	$l_o - s$	$\sigma_{oM}^{2)}$	$\sigma_{II}^{3)}$ σ_{III}	
	h_{12}	H_{12}				N	(where $s \approx 0.75 h_o$)		N/mm ²	N/mm ²	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	
1	8	4.2	0.3	0.25	0.55	119	0.19	0.36	-1 140	1 330	
	10	5.2	0.4	0.3	0.7	213	0.23	0.47	-1 170	1 300	
	12.5	6.2	0.5	0.35	0.85	291	0.26	0.59	-1 000	1 110	
	14	7.2	0.5	0.4	0.9	279	0.3	0.6	-970	1 100	
	16	8.2	0.6	0.45	1.05	412	0.34	0.71	-1 010	1 120	
	18	9.2	0.7	0.5	1.2	572	0.38	0.82	-1 040	1 130	
	20	10.2	0.8	0.55	1.35	745	0.41	0.94	-1 030	1 110	
	22.5	11.2	0.8	0.65	1.45	710	0.49	0.96	-962	1 080	
	25	12.2	0.9	0.7	1.6	868	0.53	1.07	-938	1 030	
	28	14.2	1	0.8	1.8	1 110	0.6	1.2	-961	1 090	
	31.5	16.3	1.25	0.9	2.15	1 920	0.68	1.47	-1 090	1 190	
	35.5	18.3	1.25	1	2.25	1 700	0.75	1.5	-944	1 070	
	40	20.4	1.5	1.15	2.65	2 620	0.86	1.79	-1 020	1 130	
	45	22.4	1.75	1.3	3.05	3 660	0.98	2.07	-1 050	1 150	
2	50	25.4	2	1.4	3.4	4 760	1.05	2.35	-1 060	1 140	
	56	28.5	2	1.6	3.6	4 440	1.2	2.4	-963	1 090	
	63	31	2.5	1.75	4.25	7 180	1.31	2.94	-1 020	1 090	
	71	36	2.5	2.3	4.5	6 730	1.5	3	-934	1 060	
	80	41	3	2.5	5.3	10 500	1.73	3.57	-1 030	1 140	
	90	46	3.5	2.8	6	14 200	1.88	4.12	-1 030	1 120	
	100	51	3.5	3.2	6.3	13 100	2.1	4.2	-925	1 050	
	112	57	4	3.5	7.2	17 800	2.4	4.8	-963	1 090	
	125	64	5	4	8.5	30 000	2.63	5.87	-1 060	1 150	
	140	72	5	4.5	9	27 900	3	6	-970	1 110	
	160	82	6	5.1	10.5	41 100	3.38	7.12	-1 000	1 110	
	180	92	6		11.1	37 500	3.83	7.27	-895	1 040	
	3	200	102	8(7.5)	5.6	13.6	76 400	4.2	9.4	-1 060	1 250
		225	112	8(7.5)	6.5	14.5	70 800	4.88	9.62	-951	1 180
250		127	10(94)	7	17	119 000	5.25	11.75	-1 050	1 240	

Conical disc spring of group 1 or 2



Conical disc spring of group 3

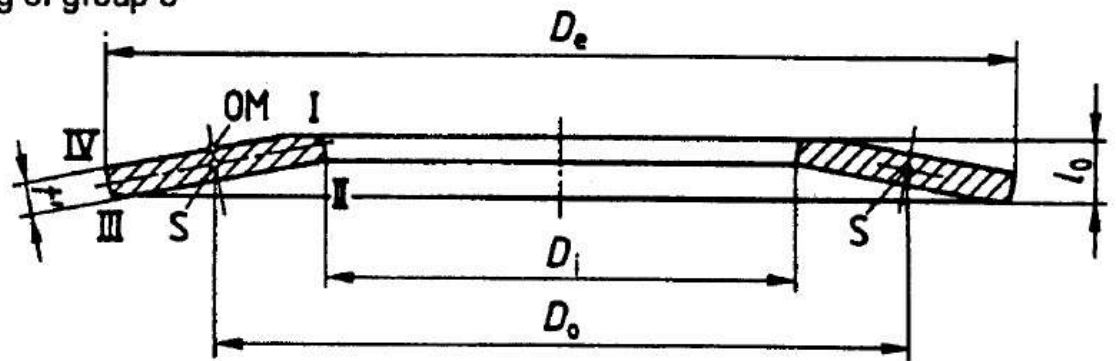


Table 1 Groups of Springs

SI No.	Group	Thickness of Single Disc t	Single Disc with Ground Ends
(1)	(2)	(3)	(4)
i)	1	Less than 1.25	No
ii)	2	From 1.25 to 6	No
iii)	3	Over 6 up to 14	Yes