

The following tolerances apply to springs made of standard materials:

Diameter tolerances

Nominal dimension		Admissible tolerances				
D_e or D_i [mm]		D_e [mm]		D_i [mm]		concentricity [mm]
greater than	up to	max.	min.	max.	min.	max.
3	6	0	-0.12	+0.12	0	0.15
6	10	0	-0.15	+0.15	0	0.18
10	18	0	-0.18	+0.18	0	0.22
18	30	0	-0.21	+0.21	0	0.26
30	50	0	-0.25	+0.25	0	0.32
50	80	0	-0.30	+0.30	0	0.60
80	120	0	-0.35	+0.35	0	0.70
120	180	0	-0.40	+0.40	0	0.80
180	250	0	-0.46	+0.46	0	0.92

Allowances for external and internal diameters and concentricity with springs according to DIN 2093

Thickness tolerances

Nominal spring thickness		Admissible tolerances	
t or t' [mm]		t or t' [mm]	
greater than	up to	max.	min.
0.20	0.60	+0.02	-0.06
0.60	1.25	+0.03	-0.09
1.25	3.80	+0.04	-0.12
3.80	6.00	+0.05	-0.15
6.00	16.00	+0.10	-0.10

Allowances for spring thickness with springs according to DIN 2093

Overall height tolerances

Nominal spring thickness		Admissible tolerances	
t or t' [mm]		l_0 [mm]	
greater than	up to	max.	min.
0.20	1.25	+0.10	-0.05
1.25	2.00	+0.15	-0.08
2.00	3.00	+0.20	-0.10
3.00	6.00	+0.30	-0.15
6.00	16.00	+0.30	-0.30

Allowances for the overall height with springs according to DIN 2093

Load tolerances

Nominal spring thickness		Admissible tolerances	
t or t' [mm]		F* [%]	
greater than	up to	max.	min.
0.20	1.25	+25	-7.5
1.25	3.00	+15	-7.5
3.00	6.00	+10	-5.0
6.00	16.00	+5	-5.0

Allowances for the spring load with springs according to DIN 2093

* F with test length $l_p = l_0 - 0.75 \cdot h_0$

Notes on the disc spring table

The following tables, list the springs according to DIN 2093 as well as those to SCHNORR® Internal standards. Sizes according to DIN 2093 are shown in heavy type. The prefix A, B or C shows the corresponding series. All sizes listed are in production and normally available from stock. The Article number quoted is the normal manufacture from spring steel with phosphate finish.

The load and the corresponding stresses are given for the three points $s = 0.25 h_0$, $s = 0.5 h_0$, $s = 0.75 h_0$. From $s > 0.75 h_0$, the actual characteristic curve increases progressively, contrary to the calculation (the table contains calculated values).

Disc springs according to group 3 are provided with turned bearing surfaces and reduced disc thickness. The disc's force increased by the bearing surfaces is compensated by means of the reduced disc thickness t'.

Disc thickness t' corresponds to the effective thickness of the spring and must be accounted for with parallel stacking for determining the column length. The elastic force applies to disc springs made of spring steel.