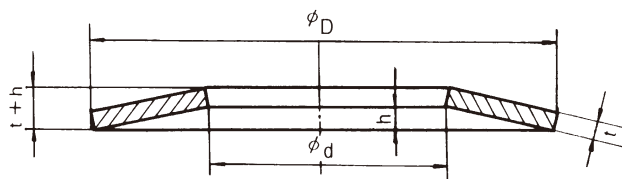


Disc Springs for Heavy Duty

DIN 2093
JIS B 2706 (Ref.)



Series $\frac{D}{t} \approx 18, \quad \frac{h}{t} \approx 0.4$

Unit: mm

Nominals JIS	Dimensions Codes	Nominals No.	Internal Diameter		External Diameter		Thickness t	Height			f=0.75h(Ref.)					
			d	Tolerance	D	Tolerance		h	t+h	Tolerance	Spring Force P N	Deformed Length =0.75h mm	Maximum Stress σ N/mm ²			
8	22001	1	4.2	+0.15 0	8	0	0.4	0.2	0.6	±0.1	205.9	0.15	1,216.0			
10	22002	2	5.2		10	-0.15	0.5	0.25	0.75		323.6	0.19	1,216.0			
12.5	22003	3	6.2		12.5	0	0.7	0.3	1		657.1	0.22	1,382.7			
14	22004	4	7.2		14		-0.2	0.8	0.3		1.1	794.3	0.22	1,304.3		
16	22005	5	8.2		16		0.9	0.35	1.25		1,029.7	0.26	1,333.7			
18	22006	6	9.2		18	1	0.4	1.4	1,274.9		0.3	1,323.9				
20	22007	7	10.2	+0.2 0	20	0	1.1	0.45	1.55	±0.15	1,520	0.34	1,284.7			
22.5	22008	8	11.2		22.5		-0.25	1.25	0.5		1.75	1,931.9	0.37	1,294.5		
25	22009	9	12.2		25		1.5	0.55	2.05		2,922.4	0.41	1,422.0			
28	22010	10	14.2		28		1.5	0.65	2.15		2,843.9	0.49	1,274.9			
31.5	22011	11	16.3		31.5		1.75	0.7	2.45		3,873.6	0.52	1,294.5			
35.5	22012	12	18.3		+0.25 0	35.5	0	2	0.8		2.8	±0.2	5,197.5	0.6	1,333.7	
40	22013	13	20.4			40		-0.3	2.25		0.9		3.15	6,501.8	0.67	1,323.9
45	22014	14	22.4			45		2.5	1		3.5		7,698.2	0.75	1,294.5	
50	22015	15	25.4			50		3	1.1		4.1		11,964	0.82	1,422.0	
56	22016	16	28.5		+0.3 0	56	0	3	1.3		4.3	±0.2	11,376	0.97	1,265.1	
63	22017	17	31			63	-0.35	3.5	1.4		4.9		15,004	1.5	1,294.5	
71	22018	18	36	71		0	4	1.6	5.6	20,545	1.2		1,333.7			
80	22019	19	41	80	-0.5		5	1.7	6.7	33,588	1.3	1,451.4				
90	22020	20	46	90	5		2	7	31,411	1.5	1,294.5					
100	22021	21	51	+0.6 0	100	0	6	2.2	8.2	+0.55 -0.25	48,013	1.65	1,422.0			
112	22022	22	57		112		-1	6	2.5		8.5	43,757	1.9	1,235.6		
125	22023	23	64		125		8	2.6	10.6		85,975	1.9	1,471.0			
140	22024	24	72		140		8	3.2	11.2		85,347	2.4	1,372.9			
160	22025	25	82	+1 0	160	0	10	3.5	13.5	+0.7 -0.35	138,333	2.5	1,480.8			
180	22026	26	92		180		-1.2	10	4		14	125,623	3	1,294.5		

- Remarks: 1. The spring force of spring steel is as shown in the table. For SUS 304 products, the values are approx. 90% of shown.
2. Maximum stress represents the maximum tensile stress that occurs at bottom fringe of disc springs.
3. Items marked with * have thickness, height, or other specifications that differ from JIS.
4. Please refer to pages T3 & T4 for technical information.

- Notes: 1. The stainless steel products that deviate from the JIS standard (JIS G 4313: Cold Rolled stainless Steel Strip for Springs) are classified as SUS304-CSP.
2. Product availability of spring steels 6mm or more in thickness is subject to material supply and demand situations. Please contact us for more information.

Product code	122	Material code	02...SUS304-CSP		Part Number Structure (Standardized Product Code)								
			70...Spring Steel		Product	Surface							
Surface code	01...Burnished (SUS304-CSP)		Hardness	HRC37 - 46 (SUS304-CSP)	①	②	②	①	①	①	①	①	①
	03...Temper Color(Spring Steel)			HRC43 - 50 (Spring Steel)	Material			Dimensions code					