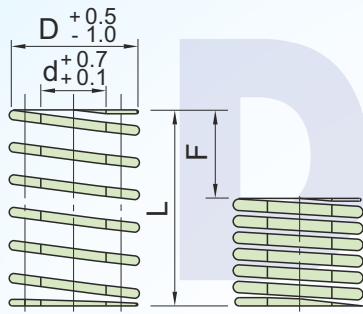


# Coil Springs – ULTRA HIGH DEFLECTION DSWY



Coil direction Right: Sectional drawing

For information on the D dimension and the counterbore hole, and also the d dimension and the shaft



Load  $\pm 10\%$   
Squarness  $3^\circ$  or less  
Free length L 50 or less  $\pm 0.5\text{mm}$   
55 or more  $\pm 1.5\%$


**F(Allowable deflection) is due to the measurement at normal temperature (40°C)**

Maximum allowable deflection at high temperature (150°/200°C).

Part No. Type D-L	D	d	L	Spring Constant		F = L x 65%
				N/mm(kgf/mm)	Fmm Load N(kgf)	
DSWY11 - 20	11	7	20	2.26 (0.23)	13	29.4 (3.0)
			25	1.81 (0.18)	16.3	
			30	1.51 (0.15)	19.5	
			35	1.29 (0.13)	22.8	
			40	1.13 (0.12)	26	
			45	1.01 (0.10)	29.3	
			50	0.91 (0.092)	32.5	
			55	0.82 (0.084)	35.8	
			60	0.75 (0.077)	39	
			65	0.70 (0.071)	42.3	
			70	0.65 (0.066)	45.5	
			75	0.60 (0.061)	48.8	
DSWY12.5 - 20	12.5	8.5	20	3.09 (0.32)	13	40.2 (4.1)
			25	2.47 (0.25)	16.3	
			30	2.06 (0.21)	19.5	
			35	1.77 (0.18)	22.8	
			40	1.55 (0.16)	26	
			45	1.37 (0.14)	29.3	
			50	1.24 (0.13)	32.5	
			55	1.12 (0.11)	35.8	
			60	1.03 (0.11)	39	
			65	0.95 (0.10)	42.3	
			70	0.88 (0.090)	45.5	
			75	0.82 (0.084)	48.8	
DSWY16.5 - 20	16.5	10.5	20	7.02 (0.72)	13	91.2 (9.3)
			25	5.61 (0.57)	16.3	
			30	4.68 (0.48)	19.5	
			35	4.01 (0.41)	22.8	
			40	3.51 (0.36)	26	
			45	3.12 (0.32)	29.3	
			50	2.81 (0.29)	32.5	
			55	2.55 (0.26)	35.8	
			60	2.34 (0.24)	39	
			65	2.16 (0.22)	42.3	
			70	2.00 (0.20)	45.5	
			75	1.87 (0.19)	48.8	

Part No. Type D-L	D	d	L	Spring Constant		F = L x 65%
				N/mm(kgf/mm)	Fmm Load N(kgf)	
DSWY20.5 - 20.5	20.5	13.5	20.5	5.58 (0.57)	19.5	108.9 (11.1)
			35	4.78 (0.49)	22.8	
			40	4.19 (0.43)	26	
			45	3.72 (0.38)	29.3	
			50	3.35 (0.34)	32.5	
			55	3.04 (0.31)	35.8	
			60	2.79 (0.28)	39	
			65	2.58 (0.26)	42.3	
			70	2.39 (0.24)	45.5	
			75	2.23 (0.23)	48.8	
			80	2.09 (0.21)	52	
			90	1.86 (0.19)	58.5	
DSWY20.5 - 35	20.5	16.5	35	6.99 (0.71)	19.5	136.3 (13.9)
			40	5.99 (0.61)	22.8	
			45	5.24 (0.53)	26	
			50	4.66 (0.48)	29.3	
			55	4.19 (0.43)	32.5	
			60	3.81 (0.39)	35.8	
			65	3.50 (0.36)	39	
			70	3.23 (0.33)	42.3	
			75	3.00 (0.31)	45.5	
			80	2.80 (0.29)	48.8	
			90	2.62 (0.27)	52	
			100	2.33 (0.24)	58.5	
DSWY30 - 200	30	21	200	1.05 (0.11)	130	200.1 (20.4)
			35	8.79 (0.90)	22.8	
			40	7.69 (0.78)	26	
			45	6.84 (0.70)	29.3	
			50	6.16 (0.63)	32.5	
			55	5.60 (0.57)	35.8	
			60	5.13 (0.52)	39	
			65	4.74 (0.48)	42.3	
			70	4.40 (0.45)	45.5	
			75	4.10 (0.42)	48.8	
			80	3.85 (0.39)	52	
			90	3.42 (0.35)	58.5	

Part No. Type D-L	D	d	L	Spring Constant		F = L x 65%
				N/mm(kgf/mm)	Fmm Load N(kgf)	
DSWY37 - 40	37	26	40	11.32 (1.15)	26.0	294.2 (30.0)
			45	10.06 (1.03)	29.3	
			50	9.05 (0.92)	32.5	
			55	8.23 (0.84)	35.8	
			60	7.54 (0.77)	39.0	
			65	6.96 (0.71)	42.3	
			70	6.47 (0.66)	45.5	
			75	6.03 (0.62)	48.8	
			80	5.66 (0.58)	52.0	
			90	5.03 (0.51)	58.5	
			100	4.53 (0.46)	65.0	
			DSWY42 - 50	42	31	
60	10.06 (1.03)	39.0				
70	8.62 (0.88)	45.5				
80	7.54 (0.77)	52.0				
90	6.71 (0.68)	58.5				
100	6.03 (0.62)	65.0				
110	5.49 (0.56)	71.5				
120	5.03 (0.51)	78.0				
130	4.64 (0.47)	84.5				
140	4.31 (0.44)	91.0				
150	4.02 (0.41)	97.5				
DSWY42 - 60	42	31				60
			70	8.62 (0.88)	45.5	
			80	7.54 (0.77)	52.0	
			90	6.71 (0.68)	58.5	
			100	6.03 (0.62)	65.0	
			110	5.49 (0.56)	71.5	
			120	5.03 (0.51)	78.0	
			130	4.64 (0.47)	84.5	
			140	4.31 (0.44)	91.0	
			150	4.02 (0.41)	97.5	
			160	3.77 (0.38)	104.0	

Alteration	Paint peeling
	 No painting
Code	NT
Spec.	Peel the coating by shot peening. Since the springs which have undergone the painting peeling are easy to rust, be careful in handling. A rusted spring could cause early breakage. Compared to painted springs, there may be some dispersions in terms of load, etc. depending on the lot.

(NT)   
(NT) DSWY 30 - 40

**M** Equivalent of SWOSC—V (Steel Wire Oil Temper Silicon for Valve)

Load calculation method: Load = Spring constant x Deflection

(SI units) N = N/mm x Fmm

kgf = kgf/mm x Fmm

(kgf = N x 0.101972)

