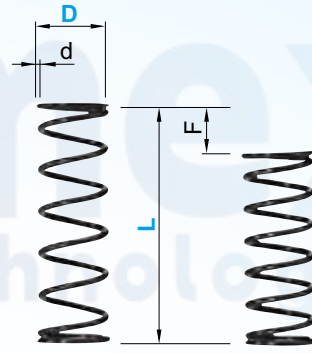


ROUND WIRE COIL SPRINGS

DWR (60% Deflection)

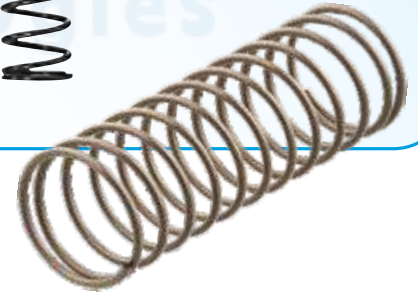
Spring constant

D	Type	DWY	DWR	DWF	DWL	DWT	DWM	DWH	DWB
2					0.5 (0.05)	1.5 (0.15)	2.0 (0.2)	2.9 (0.3)	3.9 (0.4)
3									4.9 (0.5)
4		N/mm 0.1 (kgf/mm) (0.01)						N/mm 5.9 (kgf/mm) (0.6)	N/mm 9.8 (kgf/mm) (1.0)
5			N/mm 0.3 (kgf/mm) (0.03)	N/mm 0.5 (kgf/mm) (0.05)	N/mm 1.0 (kgf/mm) (0.1)	N/mm 2.0 (kgf/mm) (0.2)	N/mm 2.9 (kgf/mm) (0.3)	N/mm 9.8 (kgf/mm) (1.0)	N/mm 19.6 (kgf/mm) (2.0)
6		N/mm 0.2 (kgf/mm) (0.02)							29.4 (3.0)
8									
10									
12									
13									
14									
16									
18									
20									
22									
27									
Fmax.		F=Lx75%	F=Lx60%	F=Lx45%	F=Lx40%	F=Lx40%	F=Lx35%	F=Lx30%	F=Lx25%



Spring constant $\pm 10\%$
 Outer dia. D $\varnothing 10$ or less $_{-0.5mm}^0$
 $\varnothing 12$ or more $_{-0.8mm}^0$
 Free length L 50 or less $\pm 1.5mm$
 55 or more $\pm 2.5mm$

M~SWP~A



● DWR: Fmax. (Maximum Allowable Deflection) = L x 60%

Part No. Type D-L	d	Height Solid	F max.	Load N(kgf) max.
DWR3 - 5	0.23	1.8	3	0.9 (0.09)
	0.25	2.3	6	1.8 (0.18)
	0.3	4.8	9	2.6 (0.27)
	0.3	4.8	12	3.5 (0.36)
	0.32	6.8	15	4.4 (0.45)
	0.32	6.8	18	5.3 (0.54)
	0.35	11.5	21	6.2 (0.63)
	0.35	11.5	24	7.1 (0.72)
DWR4 - 10	0.26	1.6	3	0.9 (0.09)
	0.29	2.2	6	1.8 (0.18)
	0.32	3.2	9	2.6 (0.27)
	0.38	6.5	12	3.5 (0.36)
	0.38	6.5	15	4.4 (0.45)
	0.4	8.4	18	5.3 (0.54)
	0.4	8.4	21	6.2 (0.63)
	0.45	15	24	7.1 (0.72)
	0.45	15	27	7.9 (0.81)
	0.45	15	30	8.8 (0.9)
	0.5	23.5	36	10.6 (1.08)
	0.5	25	39	11.5 (1.17)
DWR5 - 15	0.3	1.6	3	0.9 (0.09)
	0.35	1.6	6	1.8 (0.18)
	0.37	2.8	9	2.6 (0.27)
	0.4	4.8	12	3.5 (0.36)
	0.45	8	15	4.4 (0.45)
	0.5	12.5	21	6.2 (0.63)
	0.5	12.5	24	7.1 (0.72)
	0.55	17.6	27	7.9 (0.81)
	0.55	18	30	8.8 (0.9)
	0.55	20	33	9.7 (0.99)
	0.55	20	36	10.6 (1.08)
	0.55	20.9	39	11.5 (1.2)
DWR6 - 20	0.32	1.6	3	0.9 (0.09)
	0.4	3.2	6	1.8 (0.18)
	0.4	3.2	9	2.6 (0.27)
	0.5	7.5	12	3.5 (0.36)
	0.5	7.5	15	4.4 (0.45)
	0.5	7.5	18	5.3 (0.54)
	0.55	11.5	21	6.2 (0.63)
	0.55	11.5	24	7.1 (0.72)
	0.6	17.4	27	7.9 (0.81)
	0.6	17.4	30	8.8 (0.9)
	0.6	17.4	33	9.7 (0.99)
	0.6	17.4	36	10.6 (1.08)
DWR8 - 30	0.6	17.4	39	11.5 (1.17)
	0.6	17.4	42	12.4 (1.26)
	0.65	27.3	48	14.1 (1.4)
	0.45	2.7	6	1.8 (0.18)
	0.5	4	9	2.6 (0.27)
	0.5	4	12	3.5 (0.36)
	0.55	5.8	15	4.4 (0.45)
	0.6	8.4	18	5.3 (0.54)
	0.6	8.4	21	6.2 (0.63)
	0.6	8.4	24	7.1 (0.72)
	0.7	16	27	7.9 (0.81)
	0.7	16	30	8.8 (0.9)
0.7	16	33	9.7 (0.99)	
0.7	16	36	10.6 (1.08)	
0.7	16	39	11.5 (1.17)	
0.7	16	42	12.4 (1.26)	
0.75	22.9	48	14.1 (1.4)	

Part No. Type D-L	d	Height Solid	F max.	Load N(kgf) max.
DWR10 - 10	0.55	3.6	6	1.8 (0.18)
	0.6	4.8	9	2.6 (0.27)
	0.65	6.5	12	3.5 (0.36)
	0.65	6.5	15	4.4 (0.45)
	0.7	8.8	18	5.3 (0.54)
	0.7	8.8	21	6.2 (0.63)
	0.7	8.8	24	7.1 (0.72)
	0.8	16	27	7.9 (0.81)
	0.8	16	30	8.8 (0.9)
	0.8	16	33	9.7 (0.99)
	0.85	21	36	10.6 (1.08)
	0.85	21	39	11.5 (1.17)
DWR12 - 15	0.6	3.6	6	1.8 (0.18)
	0.65	4.6	9	2.6 (0.27)
	0.65	4.6	12	3.5 (0.36)
	0.7	6	15	4.4 (0.45)
	0.7	6	18	5.3 (0.54)
	0.7	6	21	6.2 (0.63)
	0.8	10.4	24	7.1 (0.72)
	0.8	10.4	27	7.9 (0.81)
	0.9	17.1	30	8.8 (0.9)
	0.9	17.1	33	9.7 (0.99)
	0.9	17.1	36	10.6 (1.08)
	0.9	17.1	39	11.5 (1.17)
DWR13 - 20	0.6	3.2	6	1.8 (0.18)
	0.7	4.9	9	2.6 (0.27)
	0.7	4.9	12	3.5 (0.36)
	0.8	8.4	15	4.4 (0.45)
	0.8	8.4	18	5.3 (0.54)
	0.8	8.4	21	6.2 (0.63)
	0.9	13.5	24	7.1 (0.72)
	0.9	13.5	27	7.9 (0.81)
	0.9	13.5	30	8.8 (0.9)
	0.9	13.5	33	9.7 (0.99)
	1.0	22	36	10.6 (1.08)
	1.0	22	39	11.5 (1.17)
DWR14 - 30	0.7	4.6	9	2.6 (0.27)
	0.75	5.6	12	3.5 (0.36)
	0.8	7.2	15	4.4 (0.45)
	0.8	7.2	18	5.3 (0.54)
	0.8	7.2	21	6.2 (0.63)
	0.9	11.3	24	7.1 (0.72)
	0.9	11.3	27	7.9 (0.81)
	0.9	11.3	30	8.8 (0.9)
	1.0	18	33	9.7 (0.99)
	1.0	18	36	10.6 (1.08)
	1.0	18	39	11.5 (1.17)
	1.0	18	42	12.4 (1.26)
1.1	28.6	48	14.1 (1.4)	
1.1	28.6	54	15.9 (1.62)	

Part No. Type D-L	d	Height Solid	F max.	Load N(kgf) max.
DWR16 - 15	0.75	4.5	9	2.6 (0.27)
	0.8	5.6	12	3.5 (0.36)
	0.9	8	15	4.4 (0.45)
	0.9	8	18	5.3 (0.54)
	0.9	8	21	6.2 (0.63)
	1.0	13	24	7.1 (0.72)
	1.0	13	27	7.9 (0.81)
	1.0	13	30	8.8 (0.9)
	1.0	13	33	9.7 (0.99)
	1.1	20	36	10.6 (1.08)
	1.1	20	39	11.5 (1.17)
	1.1	20	42	12.4 (1.26)
DWR18 - 20	1.1	20	48	14.1 (1.4)
	1.2	28.8	54	15.9 (1.62)
	1.0	7	12	5.8 (0.6)
	1.0	7	15	7.4 (0.75)
	1.1	9.9	18	8.8 (0.9)
	1.1	9.9	21	10.3 (1.05)
	1.2	14.4	24	11.8 (1.2)
	1.2	14.4	27	13.2 (1.35)
	1.2	14.4	30	14.7 (1.5)
	1.3	19.5	33	16.2 (1.65)
	1.3	19.5	36	17.7 (1.8)
	DWR20 - 25	1.3	19.5	39
1.3		19.5	42	20.6 (2.1)
1.4		27.3	48	23.5 (2.4)
1.0		6	12	5.8 (0.6)
1.1		8.3	15	7.4 (0.75)
1.1		8.3	18	8.8 (0.9)
1.2		10.8	21	10.3 (1.05)
1.2		10.8	24	11.8 (1.2)
1.2		10.8	27	13.2 (1.35)
1.3		15	30	14.7 (1.5)
1.3		15	33	16.2 (1.65)
DWR22 - 30		1.3	15	36
	1.3	15	39	19.1 (1.95)
	1.4	21	42	20.6 (2.1)
	1.4	21	48	23.5 (2.4)
	1.1	6.9	12	5.9 (0.6)
	1.2	9	15	7.4 (0.75)
	1.2	9	18	8.8 (0.9)
	1.3	12.4	21	10.3 (1.05)
	1.3	12.4	24	11.8 (1.2)
	1.3	12.4	27	13.2 (1.35)
	1.4	16.1	30	14.7 (1.5)
	1.4	16.1	33	16.2 (1.65)
DWR27 - 40	1.4	16.1	36	17.7 (1.8)
	1.5	22.5	39	19.1 (1.95)
	1.5	22.5	42	20.6 (2.1)
	1.5	22.5	48	23.5 (2.4)
	1.3	8.5	18	8.8 (0.9)
	1.4	10.5	21	10.3 (1.05)
	1.4	10.5	24	11.8 (1.2)
	1.4	10.5	27	13.2 (1.35)
	1.6	17.6	30	14.7 (1.5)
	1.6	17.6	33	16.2 (1.65)
	1.6	17.6	36	17.7 (1.8)
	1.7	22.1	39	19.1 (1.95)
1.7	22.1	42	20.6 (2.1)	
1.7	22.1	48	23.5 (2.4)	

● Load calculation method: Load=Spring constantxDeflection

(SI units) N = N/mm x Fmm
 kgf = kgf/mm x Fmm
 (kgf = N x 0.101972)

Neither end is ground for all WR type springs.

The solid height values are for reference only. There may be some variation between lots.

Operation count: 1 million

Instructions and precautions for the use of coil springs

