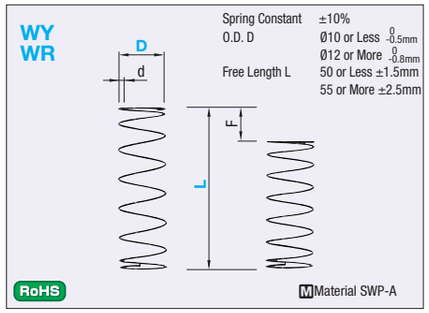
Round Coil Springs

WY, WR: O.D. Referenced



Spring Constant

D12 and 14 for WY Type and D12,14 and 20 for WT Type are not available.

D \ Type	WY	WR	WF	WL	WT	WM	WH	WB
2				0.5{0.05}				
3	N/mm 0.1 {kgf/mm} {0.01}	N/mm 0.3 {kgf/mm} {0.03}	N/mm 0.5 {kgf/mm} {0.05}	N/mm 1.0 {kgf/mm} {0.1}	1.5 {0.15}	2.0 {0.2}		3.9{0.4}
4							2.9{0.3}	4.9{0.5}
5					N/mm 2.0 {kgf/mm} {0.2}	N/mm 2.9 {kgf/mm} {0.3}	N/mm 5.9 {kgf/mm} {0.6}	N/mm 9.8 {kgf/mm} {1.0}
6								
8								
10	N/mm 0.2 {kgf/mm} {0.02}							
12							N/mm 9.8 {kgf/mm} {1.0}	N/mm 19.6 {kgf/mm} {2.0}
13								
14								
16								
18		N/mm 0.5 {kgf/mm} {0.05}	N/mm 1.0 {kgf/mm} {0.1}	N/mm 2.9 {kgf/mm} {0.3}	N/mm 3.9 {kgf/mm} {0.4}	N/mm 4.9 {kgf/mm} {0.5}	N/mm 14.7 {kgf/mm} {1.5}	29.4{3.0}
20								
22								N/mm 29.4 {kgf/mm} {3.0}
27								
Fmax.	F=L×75%	F=L×60%	F=L×45%	F=L×40%	F=L×40%	F=L×35%	F=L×30%	F=L×25%

Ordering Example — Part Number: WY13-60

WY: Fmax. (Allowable Deflection) =Lx75%

d	Solid Length	F max.	Load N{kgf} max.	Part Number Type D-L	Unit Price 10 ~ 19 pcs.
0.16	1.0	3.75	0.38{0.04}	WY3- 5	
0.2	2.0	7.5	0.75{0.08}	10	
0.23	3.6	11.2	1.12{0.11}	15	
0.23	3.6	15	1.5{0.15}	20	
0.25	5.5	18.7	1.87{0.19}	25	
0.26	6.5	22.5	2.25{0.23}	30	
0.2	1.1	3.75	0.38{0.04}	WY4- 5	
0.23	1.9	7.5	0.7{0.08}	10	
0.23	1.9	11.2	1.1{0.11}	15	
0.25	2.7	15	1.5{0.15}	20	
0.29	5	18.7	1.8{0.19}	25	
0.29	5	22.5	2.2{0.23}	30	
0.32	7.7	26.2	2.6{0.26}	35	
0.32	7.7	30	2.9{0.3}	40	
0.25	1.7	7.5	0.7{0.08}	WY5- 10	
0.25	1.7	11.2	1.1{0.11}	15	
0.3	3.2	15	1.5{0.15}	20	
0.3	3.2	18.7	1.8 {0.19}	25	
0.35	6.3	22.5	2.2{0.23}	30	
0.35	6.3	26.2	2.6{0.26}	35	
0.38	9.2	30	2.9{0.3}	40	
0.38	9.2	33.7	3.3{0.34}	45	
0.38	9.2	37.5	3.7{0.38}	50	
0.3	2.1	7.5	0.75{0.08}	WY6- 10	
0.32	2.8	11.2	1.1{0.11}	15	
0.32	2.8	15	1.5{0.15}	20	
0.35	4.1	18.7	1.8{0.19}	25	
0.38	5.6	22.5	2.2{0.23}	30	
0.38	5.6	26.2	2.6{0.26}	35	
0.4	7.2	30	2.9{0.3}	40	
0.4	7.2	33.7	3.3{0.34}	45	
0.4	7.2	37.5	3.7{0.38}	50	
0.45	12.2	41.2	4.0{0.41}	55	
0.45	12.2	45	4.4{0.45}	60	
0.45	12.2	48.7	4.8{0.49}	65	
0.45	12.2	52.5	5.1{0.53}	70	

d	Solid Length	F max.	Load N{kgf} max.	Part Number Type D-L	Unit Price 10 ~ 19 pcs.
0.35	2.1	7.5	0.75{0.08}	WY8- 10	
0.38	3	11.2	1.1{0.11}	15	
0.4	3.5	15	1.5{0.15}	20	
0.4	3.5	18.7	1.8{0.19}	25	
0.45	5.7	22.5	2.2{0.23}	30	
0.45	5.7	26.2	2.6{0.26}	35	
0.45	5.7	30	2.9{0.3}	40	
0.45	5.7	33.7	3.3{0.34}	45	
0.5	9	37.5	3.7{0.38}	50	
0.5	9	41.2	4.0{0.41}	55	
0.5	9	45	4.4{0.45}	60	
0.5	9	48.7	4.8{0.49}	65	
0.5	9	52.5	5.1{0.53}	70	
0.5	3	11.2	2.26{0.23}	WY10- 15	
0.55	4.6	15	2.9{0.3}	20	
0.55	4.6	18.7	3.7{0.37}	25	
0.6	6.6	22.5	4.4{0.45}	30	
0.6	6.6	26.2	5.1{0.52}	35	
0.65	9.1	30	5.9{0.6}	40	
0.65	9.1	33.7	6.6{0.67}	45	
0.65	9.1	37.5	7.4{0.75}	50	
0.7	12.6	41.2	8.1{0.82}	55	
0.7	12.6	45	8.8{0.9}	60	
0.7	12.6	48.7	9.6{0.97}	65	
0.7	12.6	52.5	10.3{1.05}	70	

d	Solid Length	F max.	Load N{kgf} max.	Part Number Type D-L	Unit Price 10 ~ 19 pcs.
0.6	3.9	15	2.9{0.3}	WY13- 20	
0.65	5.1	18.7	3.7{0.37}	25	
0.65	5.1	22.5	4.4{0.45}	30	
0.7	6.7	26.2	5.1{0.52}	35	
0.75	8.7	30	5.9{0.6}	40	
0.75	8.7	33.7	6.6{0.67}	45	
0.8	11.6	37.5	7.4{0.75}	50	
0.8	11.6	41.2	8.1{0.82}	55	
0.8	11.6	45	8.8{0.9}	60	
0.85	15.3	48.7	9.6{0.97}	65	
0.85	15.3	52.5	10.3{1.05}	70	
0.65	3.6	15	2.9{0.3}	WY16- 20	
0.7	4.6	18.7	3.7{0.37}	25	
0.75	5.7	22.5	4.4{0.45}	30	
0.8	7	26.2	5.1{0.52}	35	
0.85	9	30	5.9{0.6}	40	
0.85	9	33.7	6.6{0.67}	45	
0.9	11.3	37.5	7.4{0.75}	50	
0.9	11.3	41.2	8.1{0.82}	55	
0.9	11.3	45	8.8{0.9}	60	
0.9	11.3	48.7	9.6{0.97}	65	
0.9	11.3	52.5	10.3{1.05}	70	

- Load calculation method = Spring constant x Deflection
  (Int'l Unit) N=N/mmxFmm
  kgf=kgf/mmxFmm
  (kgf=Nx0.101972)

Both ends of WY Type springs are not ground.
The values of solid length are for reference only. There may be some variations depending on the lot.
Usage Count: 1 Million Times
Product Outline P.327
How to use coil springs, and precautions P.328

WR: Fmax. (Allowable Deflection) = Lx60%

d	Solid Length	F max.	Load N{kgf} max.	Part Number Type D-L	Unit Price 10 ~ 19 pcs.
0.23	1.8	3	0.9{0.09}	WR3- 5	
0.25	2.3	6	1.8{0.18}	10	
0.3	4.8	9	2.6{0.27}	15	
0.3	4.8	12	3.5{0.36}	20	
0.32	6.8	15	4.4{0.45}	25	
0.32	6.8	18	5.3{0.54}	30	
0.35	11.5	21	6.2{0.63}	35	
0.35	11.5	24	7.1{0.72}	40	
0.26	1.6	3	0.9{0.09}	WR4- 5	
0.29	2.2	6	1.8{0.18}	10	
0.32	3.2	9	2.6{0.27}	15	
0.38	6.5	12	3.5{0.36}	20	
0.38	6.5	15	4.4{0.45}	25	
0.4	8.4	18	5.3{0.54}	30	
0.4	8.4	21	6.2{0.63}	35	
0.45	15	24	7.1{0.72}	40	
0.45	15	27	7.9{0.81}	45	
0.45	15	30	8.8{0.9 }	50	
0.45	15	33	9.7{0.99}	55	
0.5	23.5	36	10.6{1.08}	60	
0.5	25	39	11.5{1.17}	65	
0.5	25	42	12.4{1.26}	70	
0.3	1.6	3	0.9{0.09}	WR5- 5	
0.35	2.8	6	1.8{0.18}	10	
0.35	2.8	9	2.6{0.27}	15	
0.4	4.8	12	3.5{0.36}	20	
0.45	8	15	4.4{0.45}	25	
0.45	8	18	5.3{0.54}	30	
0.5	12.5	21	6.2{0.63}	35	
0.5	12.5	24	7.1{0.72}	40	
0.55	17.6	27	7.9{0.81}	45	
0.55	18	30	8.8{0.9}	50	
0.55	20	33	9.7{0.99}	55	
0.55	20	36	10.6{1.08}	60	
0.55	20.9	39	11.5{1.2}	65	
0.55	20.9	42	12.4{1.3}	70	
0.32	1.6	3	0.9{0.09}	WR6- 5	
0.4	3.2	6	1.8{0.18}	10	
0.4	3.2	9	2.6{0.27}	15	
0.5	7.5	12	3.5{0.36}	20	
0.5	7.5	15	4.4{0.45}	25	
0.5	7.5	18	5.3{0.54}	30	
0.55	11.5	21	6.2{0.63}	35	
0.55	11.5	24	7.1{0.72}	40	
0.6	17.4	27	7.9{0.81}	45	
0.6	17.4	30	8.8{0.9}	50	
0.6	17.4	33	9.7{0.99}	55	
0.6	17.4	36	10.6{1.08}	60	
0.6	17.4	39	11.5{1.17}	65	
0.6	17.4	42	12.4{1.26}	70	
0.65	27.3	48	14.1{1.4}	80	
0.45	2.7	6	1.8{0.18}	WR8- 10	
0.5	4	9	2.6{0.27}	15	
0.5	4	12	3.5{0.36}	20	
0.55	5.8	15	4.4{0.45}	25	
0.6	8.4	18	5.3{0.54}	30	
0.6	8.4	21	6.2{0.63}	35	
0.6	8.4	24	7.1{0.72}	40	
0.7	16	27	7.9{0.81}	45	
0.7	16	30	8.8{0.9}	50	
0.7	16	33	9.7{0.99}	55	
0.7	16	36	10.6{1.08}	60	
0.7	16	39	11.5{1.17}	65	
0.7	16	42	12.4{1.26}	70	
0.75	22.9	48	14.1{1.4}	80	

d	Solid Length	F max.	Load N{kgf} max.	Part Number Type D-L	Unit Price 10 ~ 19 pcs.
0.55	3.6	6	1.8{0.18}	WR10- 10	
0.6	4.8	9	2.6{0.27}	15	
0.65	6.5	12	3.5{0.36}	20	
0.65	6.5	15	4.4{0.45}	25	
0.7	8.8	18	5.3{0.54}	30	
0.7	8.8	21	6.2{0.63}	35	
0.7	8.8	24	7.1{0.72}	40	
0.8	16	27	7.9{0.81}	45	
0.8	16	30	8.8{0.9}	50	
0.8	16	33	9.7{0.99}	55	
0.85	21	36	10.6{1.08}	60	
0.85	21	39	11.5{1.17}	65	
0.85	21	42	12.4{1.26}	70	
0.9	28.8	48	14.1{1.4}	80	
0.6	3.6	6	1.8{0.18}	WR12- 10	
0.65	4.6	9	2.6{0.27}	15	
0.65	4.6	12	3.5{0.36}	20	
0.7	6	15	4.4{0.45}	25	
0.7	6	18	5.3{0.54}	30	
0.7	6	21	6.2{0.63}	35	
0.8	10.4	24	7.1{0.72}	40	
0.8	10.4	27	7.9{0.81}	45	
0.9	17.1	30	8.8{0.9}	50	
0.9	17.1	33	9.7{0.99}	55	
0.9	17.1	36	10.6{1.08}	60	
0.9	17.1	39	11.5{1.17}	65	
0.9	17.1	42	12.4{1.26}	70	
1.0	28	48	14.1{1.4}	80	
0.6	3.2	6	1.8{0.18}	WR13- 10	
0.7	4.9	9	2.6{0.27}	15	
0.7	4.9	12	3.5{0.36}	20	
0.8	8.4	15	4.4{0.45}	25	
0.8	8.4	18	5.3{0.54}	30	
0.8	8.4	21	6.2{0.63}	35	
0.9	13.5	24	7.1{0.72}	40	
0.9	13.5	27	7.9{0.81}	45	
0.9	13.5	30	8.8{0.9}	50	
0.9	13.5	33	9.7{0.99}	55	
1.0	22	36	10.6{1.08}	60	
1.0	22	39	11.5{1.17}	65	
1.0	22	42	12.4{1.26}	70	
1.0	22	48	14.1{1.4}	80	
1.0	22	54	15.9{1.62}	90	
0.7	4.6	9	2.6{0.27}	WR14- 15	
0.75	5.6	12	3.5{0.36}	20	
0.8	7.2	15	4.4{0.45}	25	
0.8	7.2	18	5.3{0.54}	30	
0.8	7.2	21	6.2{0.63}	35	
0.9	11.3	24	7.1{0.72}	40	
0.9	11.3	27	7.9{0.81}	45	
0.9	11.3	30	8.8{0.9}	50	
1.0	18	33	9.7{0.99}	55	
1.0	18	36	10.6{1.08}	60	
1.0	18	39	11.5{1.17}	65	
1.0	18	42	12.4{1.26}	70	
1.1	28.6	48	14.1{1.4}	80	
1.1	28.6	54	15.9{1.62}	90	

- Load calculation method = Spring constant x Deflection
  (Int'l Unit) N=N/mmxFmm
  kgf=kgf/mmxFmm
  (kgf=Nx0.101972)

d	Solid Length	F max.	Load N{kgf} max.	Part Number Type D-L	Unit Price 10 ~ 19 pcs.
0.75	4.5	9	2.6{0.27}	WR16- 15	
0.8	5.6	12	3.5{0.36}	20	
0.9	8	15	4.4{0.45}	25	
0.9	8	18	5.3{0.54}	30	
0.9	8	21	6.2{0.63}	35	
1.0	13	24	7.1{0.72}	40	
1.0	13	27	7.9{0.81}	45	
1.0	13	30	8.8{0.9}	50	
1.0	13	33	9.7{0.99}	55	
1.1	20	36	10.6{1.08}	60	
1.1	20	39	11.5{1.17}	65	
1.1	20	42	12.4{1.26}	70	
1.1	20	48	14.1{1.4}	80	
1.2	28.8	54	15.9{1.62}	90	
1.0	7	12	5.8{0.6}	WR18- 20	
1.0	7	15	7.4{0.75}	25	
1.1	9.9	18	8.8{0.9}	30	
1.1	9.9	21	10.3{1.05}	35	
1.2	14.4	24	11.8{1.2}	40	
1.2	14.4	27	13.2{1.35}	45	
1.2	14.4	30	14.7{1.5}	50	
1.3	19.5	33	16.2{1.65}	55	
1.3	19.5	36	17.7{1.8}	60	
1.3	19.5	39	19.1{1.95}	65	
1.4	27.3	48	23.5{2.4}	80	
1.0	6	12	5.8{0.6}	WR20- 20	
1.1	8.3	15	7.4{0.75}	25	
1.1	8.3	18	8.8{0.9}	30	
1.2	10.8	21	10.3{1.05}	35	
1.2	10.8	24	11.8{1.2}	40	
1.2	10.8	27	13.2{1.35}	45	
1.3	15	30	14.7{1.5}	50	
1.3	15	33	16.2{1.65}	55	
1.3	15	36	17.7{1.8}	60	
1.3	15	39	19.1{1.95}	65	
1.4	21	42	20.6{2.1}	70	
1.4	21	48	23.5{2.4}	80	
1.1	6.9	12	5.9{0.6}	WR22- 20	
1.2	9	15	7.4{0.75}	25	
1.2	9	18	8.8{0.9}	30	
1.3	12.4	21	10.3{1.05}	35	
1.3	12.4	24	11.8{1.2}	40	
1.3	12.4	27	13.2{1.35}	45	
1.4	16.1	30	14.7{1.5}	50	
1.4	16.1	33	16.2{1.65}	55	
1.4	16.1	36	17.7{1.8}	60	
1.5	22.5	39	19.1{1.95}	65	
1.5	22.5	42	20.6{2.1}	70	
1.5	22.5	48	23.5{2.4}	80	
1.3	8.5	18	8.8{0.9}	WR27- 30	
1.4	10.5	21	10.3{1.05}	35	
1.4	10.5	24	11.8{1.2}	40	
1.4	10.5	27	13.2{1.35}	45	
1.6	17.6	30	14.7{1.5}	50	
1.6	17.6	33	16.2{1.65}	55	
1.6	17.6	36	17.7{1.8}	60	
1.7	22.1	39	19.1{1.95}	65	
1.7	22.1	42	20.6{2.1}	70	
1.7	22.1	48	23.5{2.4}	80	

Both ends of WR Type springs are not ground.
The values of solid length are for reference only. There may be some variations depending on the lot.
Usage Count: 1 Million Times
Product Outline P.327
How to use coil springs, and precautions P.328