

Please refer to website for current pricing.

# Round Wire Springs

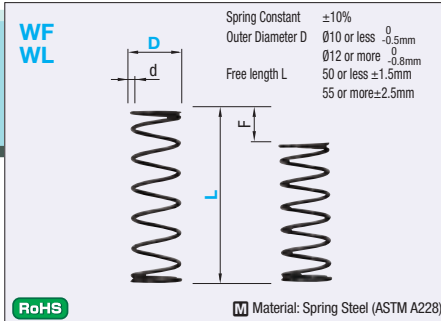
## -WF / WL Outer Diameter Selectable-

Order Example **Part Number** WF13-60 **Days to Ship**

**Volume Discount Rate**

Quantity	1-9	10-19	20-99	100~
Discount Rate	Unit Price			

For larger quantity orders "Days to Ship" may differ from published catalog term. P87



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

Type	WY	WR	WF	WT	WM	WH	WB
2							
3							
4	N/mm 0.1 (kgf/mm) {0.01}			1.5 {0.15}	2.0 {0.2}	2.9{0.3}	3.9{0.4}
5							
6							
8							
10	N/mm 0.3 (kgf/mm) {0.03}			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}
12							
13	N/mm 0.2 (kgf/mm) {0.02}						
14							
16							
18							
20							
22	N/mm 0.5 (kgf/mm) {0.05}			N/mm 3.9 (kgf/mm) {0.4}	N/mm 4.9 (kgf/mm) {0.5}	N/mm 14.7 (kgf/mm) {1.5}	N/mm 19.6 (kgf/mm) {2.0}
27							
Fmax.	F=Lx75%	F=Lx60%	F=Lx45%	F=Lx40%	F=Lx40%	F=Lx35%	F=Lx30%

### WF: Fmax. (Allowable Deflection) = L x 45%

d	Solid Length	F max.	Load N(kgf) max.	Part Number Type D-L	Unit Price Qty. 1-9
0.26	2	2.25	1.1{0.11}	WF3- 5*	
0.32	5	4.5	2.2{0.22}	10*	
0.32	5	6.7	3.2{0.33}	15*	
0.35	7	9	4.4{0.45}	20*	
0.35	7	11.2	5.5{0.56}	25*	
0.4	13.2	13.5	6.6{0.67}	30	
0.4	13.2	15.7	7.6{0.78}	35	
0.4	13.2	18	8.8{0.9}	40	
0.32	2.3	2.25	1.1{0.11}	WF4- 5*	
0.35	3.1	4.5	2.2{0.22}	10*	
0.4	5.6	6.7	3.2{0.33}	15*	
0.4	5.6	9	4.4{0.45}	20*	
0.45	9.9	11.2	5.5{0.56}	25*	
0.45	9.9	13.5	6.6{0.67}	30*	
0.5	16.5	15.7	7.6{0.78}	35	
0.5	16.5	18	8.8{0.9}	40	
0.5	16.5	20	9.8{1.0}	45	
0.5	16.5	22.5	10.8{1.1}	50	
0.5	16.5	24.7	12.1{1.23}	55	
0.5	16.5	27	12.7{1.3}	60	
0.55	26.4	29.2	14.3{1.46}	65*	
0.55	26.4	31.5	15.4{1.58}	70*	
0.35	2	2.25	1.1{0.11}	WF5- 5*	
0.38	2.8	4.5	2.2{0.22}	10*	
0.4	3.4	6.7	3.2{0.33}	15*	
0.45	5.4	9	4.4{0.45}	20*	
0.5	8.5	11.2	5.5{0.56}	25*	
0.55	13.2	13.5	6.6{0.67}	30	
0.55	13.2	15.7	7.6{0.78}	35	
0.55	20.4	18	8.8{0.9}	40	
0.6	20.4	20	9.8{1.0}	45	
0.6	20.4	22.5	10.8{1.1}	50	
0.6	20.4	24.7	12.1{1.23}	55	
0.6	20.4	27	12.7{1.3}	60	
0.6	20.4	29.2	14.3{1.46}	65	
0.6	20.4	31.5	15.4{1.6}	70	
0.4	2.3	2.25	1.1{0.11}	WF6- 5*	
0.5	5	4.5	2.2{0.22}	10	
0.55	8	6.7	3.2{0.33}	15	
0.55	8	9	4.4{0.45}	20	
0.6	12	11.2	5.5{0.56}	25	
0.65	16	13.5	6.6{0.67}	30	
0.65	17	15.7	7.6{0.78}	35	
0.65	17	18	8.8{0.9}	40	
0.65	17	20	9.8{1.0}	45	
0.7	25.2	22.5	10.8{1.1}	50	
0.7	25.2	24.7	12.1{1.23}	55	
0.7	25.2	27	12.7{1.3}	60	
0.7	25.2	29.2	14.3{1.46}	65	
0.7	25.2	31.5	14.7{1.5}	70	
0.7	25.2	36	17.7{1.8}	80	
0.6	5	4.5	2.2{0.22}	WF8-10	
0.65	7.5	6.7	3.2{0.33}	15	
0.7	10.8	9	4.4{0.45}	20	
0.7	10.8	11.2	5.5{0.56}	25	
0.75	14.5	13.5	6.6{0.67}	30	
0.75	14.5	15.7	7.6{0.78}	35	
0.8	20	18	8.8{0.9}	40	
0.8	20	20	9.8{1.0}	45	
0.8	20	22.5	10.8{1.1}	50	
0.8	20	24.7	12.1{1.23}	55	
0.85	27.6	27	12.7{1.3}	60	
0.85	27.6	29.2	14.3{1.46}	65	
0.85	27.6	31.5	14.7{1.5}	70	
0.85	28.1	36	17.7{1.8}	80	

- Load Calculation Method: Load = Spring Constant x Deflection  
 (Int'l Unit) N=mmxFmm  
 kgf=kgf/mmxFmm  
 (kgf=Nx0.101972)

- Both ends of \* marked WF Type springs are not ground.
- The values of solid length are for reference only. There may be some variations depending on the lot.
- Operation frequency: One million times
- Product Overview P2071
- How to use coil springs and precautions P2072

### WL: Fmax. (Allowable Deflection) = L x 40%

d	Solid Length	F max.	Load N(kgf) max.	Part Number Type D-L	Unit Price Qty. 1-9
0.2	1.7	2	0.98{0.1}	WL2- 5*	
0.26	5.2	4	2.0{0.2}	10*	
0.26	5.2	6	2.9{0.3}	15*	
0.29	9	8	3.9{0.4}	20*	
0.29	9	10	4.9{0.5}	25*	
0.3	10.8	12	5.9{0.6}	30*	
0.3	2.1	2	2.0{0.2}	WL3- 5*	
0.35	3.9	4	3.9{0.4}	10*	
0.4	6.5	6	5.9{0.6}	15*	
0.4	6.5	8	7.8{0.8}	20*	
0.45	13	10	9.8{1.0}	25*	
0.45	13	12	11.8{1.2}	30*	
0.45	13	14	13.7{1.4}	35*	
0.5	21	16	15.7{1.6}	40*	
0.35	2.1	2	2.0{0.2}	WL4- 5*	
0.45	5	4	3.9{0.4}	10*	
0.45	5	6	5.9{0.6}	15*	
0.5	9	8	7.8{0.8}	20	
0.5	9	10	9.8{1.0}	25	
0.55	13.9	12	11.8{1.2}	30	
0.55	13.9	14	13.7{1.4}	35	
0.6	21.6	16	15.7{1.6}	40	
0.6	21.6	18	17.7{1.8}	45	
0.6	21.6	20	19.6{2.0}	50	
0.6	21.6	22	21.6{2.2}	55	
0.65	33	24	23.5{2.4}	60	
0.4	2.3	2	2.0{0.2}	WL5- 5*	
0.45	3.4	4	3.9{0.4}	10*	
0.5	5	6	5.9{0.6}	15*	
0.55	7.7	8	7.8{0.8}	20	
0.6	10.8	10	9.8{1.0}	25	
0.6	10.8	12	11.8{1.2}	30	
0.65	15.6	14	13.7{1.4}	35	
0.65	15.6	16	15.7{1.6}	40	
0.7	20	18	17.7{1.8}	45	
0.7	20	20	19.6{2.0}	50	
0.7	23.1	22	21.6{2.2}	55	
0.75	33	24	23.5{2.4}	60	
0.75	32.3	26	25.5{2.6}	65	
0.75	32.3	28	27.5{2.8}	70	
0.45	2.5	2	2.0{0.2}	WL6- 5*	
0.55	4.7	4	3.9{0.4}	10	
0.55	4.7	6	5.9{0.6}	15	
0.65	9	8	7.8{0.8}	20	
0.65	9	10	9.8{1.0}	25	
0.7	13.7	12	11.8{1.2}	30	
0.7	13.7	14	13.7{1.4}	35	
0.7	13.7	16	15.7{1.6}	40	
0.75	18.9	18	17.7{1.8}	45	
0.75	18.9	20	19.6{2.0}	50	
0.75	18.9	22	21.6{2.2}	55	
0.8	26.4	24	23.5{2.4}	60	
0.8	26.4	26	25.5{2.6}	65	
0.85	30.6	28	27.5{2.8}	70	
0.85	34.9	32	31.4{3.2}	80	
0.65	4.7	4	4.0{0.4}	WL10- 10	
0.8	6.4	6	5.9{0.6}	15	
0.8	6.4	8	7.8{0.8}	20	
0.9	10.8	10	9.8{1.0}	25	
0.9	10.8	12	11.8{1.2}	30	
0.9	10.8	14	13.7{1.4}	35	
0.9	10.8	16	15.7{1.6}	40	
1.0	17	18	17.7{1.8}	45	
1.0	17	20	19.6{2.0}	50	
1.0	17	22	21.6{2.2}	55	
1.0	17	24	23.5{2.4}	60	
1.1	24	26	25.5{2.6}	65	
1.1	24	28	27.5{2.8}	70	
1.1	24	32	31.4{3.2}	80	
0.8	4.8	4	4.0{0.4}	WL12- 10	
0.9	7.2	6	5.9{0.6}	15	
0.9	7.2	8	7.8{0.8}	20	
0.9	7.2	10	9.8{1.0}	25	
1.0	10.5	12	11.8{1.2}	30	
1.0	10.5	14	13.7{1.4}	35	
1.0	10.5	16	15.7{1.6}	40	
1.1	15.4	18	17.7{1.8}	45	
1.1	15.4	20	19.6{2.0}	50	
1.1	15.4	22	21.6{2.2}	55	
1.2	22.8	24	23.5{2.4}	60	
1.2	22.8	26	25.5{2.6}	65	
1.2	22.8	28	27.5{2.8}	70	
1.3	34.5	32	31.4{3.2}	80	
0.85	5.1	4	4.0{0.4}	WL13- 10	
0.9	6.3	6	5.9{0.6}	15	
1.0	8.7	8	7.8{0.8}	20	
1.0	8.7	10	9.8{1.0}	25	
1.1	13.2	12	11.8{1.2}	30	
1.1	13.2	14	13.7{1.4}	35	
1.1	13.2	16	15.7{1.6}	40	
1.1	13.2	18	17.7{1.8}	45	
1.1	13.2	20	19.6{2.0}	50	
1.1	13.2	22	21.6{2.2}	55	
1.1	13.2	24	23.5{2.4}	60	
1.2	18.6	26	25.5{2.6}	65	
1.2	18.6	28	27.5{2.8}	70	
1.4	37.8	32	31.4{3.2}	80	
1.4	37.8	36	35.3{3.6}	90	
1.0	7.5	6	5.9{0.6}	WL14- 15	
1.0	7.5	8	7.8{0.8}	20	
1.0	7.5	10	9.8{1.0}	25	
1.1	11	12	11.8{1.2}	30	
1.1	11	14	13.7{1.4}	35	
1.1	11	16	15.7{1.6}	40	
1.2	15.6	18	17.7{1.8}	45	
1.2	15.6	20	19.6{2.0}	50	
1.2	15.6	22	21.6{2.2}	55	
1.2	15.6	24	23.5{2.4}	60	
1.3	22.1	26	25.5{2.6}	65	
1.3	22.1	28	27.5{2.8}	70	
1.3	22.1	32	31.4{3.2}	80	
1.5	43.5	36	35.3{3.6}	90	

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