ROUND WIRE COIL SPRINGS
—WL (40% DEFLECTION), WT (40% DEFLECTION)—

MORE ITEMS

SGP Stock

Printed in Red

The quantity discount rate is also applicable to alteration cost.
All price & lead time are to be quoted.

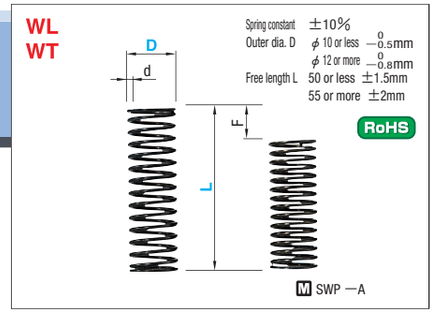
Order — Catalog No. WL 13—60

Delivery — • Printed in Red: SGP Stock | • Printed in Blue: 3 Days

For area out of Singapore please refer to P.i.

Quantity discount rate

Quantity	1～9	10～19	20～99	100～500
Rate	—	5%	10%	15%



Spring constant (D12/14/20 are not available for WT type.)

D \ Type	WY	WR	WF	WL	WT	WM	WH	WB
2				0.5{0.05}				
3	N/mm 0.1 {kgf/mm} {0.01}				1.5 {0.15}	2.0 {0.2}		3.9{0.4}
4		N/mm 0.3 {kgf/mm} {0.03}	N/mm 0.5 {kgf/mm} {0.05}	N/mm 1.0 {kgf/mm} {0.1}			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	N/mm 0.2 {kgf/mm} {0.02}							
8							N/mm 9.8 {kgf/mm} {1.0}	N/mm 19.6 {kgf/mm} {2.0}
10								29.4{3.0}
12								
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}	N/mm 29.4 {kgf/mm} {3.0}
20								
22								
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%

■WL : Fmax. (Allowable deflection) = L×40%

The quantity discount rate is also applicable to alteration cost.
All price & lead time are to be quoted.

d	Solid height	F max.	N{kgf} max.	Catalog No. Type D—L	U/Price Q'ty : 1~9
0.2	1.7	2	0.98 {0.1}	WL 2— 5*	Quotation
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}	WL 3— 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}	WL 4— 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}	WL 5— 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}	WL 6— 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	

d	Solid height	F max.	N{kgf} max.	Catalog No. Type D—L	U/Price Q'ty : 1~9
0.65	4.7	4	3.9{0.4}	WL 8—10	Quotation
0.75	8.5	6	5.9{0.6}	15	
0.75	8.5	8	7.8{0.8}	20	
0.75	8.5	10	9.8{1.0}	25	
0.8	11.2	12	11.8{1.2}	30	
0.8	11.2	14	13.7{1.4}	35	
0.8	11.2	16	15.7{1.6}	40	
0.85	15.3	18	17.7{1.8}	45	
0.85	15.3	20	19.6{2.0}	50	
0.85	15.3	22	21.6{2.2}	55	
0.9	19.4	24	23.5{2.4}	60	
0.9	19.4	26	25.5{2.6}	65	
1.0	31	28	27.5{2.8}	70	
1.0	31	32	31.4{3.2}	80	
0.75	5.3	4	3.9{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	24.2	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	

d	Solid height	F max.	N{kgf} max.	Catalog No. Type D—L	U/Price Q'ty : 1~9
1.1	8.2	6	5.9{ 0.6}	WL16—15	Quotation
1.1	8.2	8	7.8{ 0.8}	20	
1.2	10	10	9.8{ 1.0}	25	
1.2	10	12	11.8{ 1.2}	30	
1.2	10	14	13.7{ 1.4}	35	
1.2	10	16	15.7{ 1.6}	40	
1.4	21	18	17.7{ 1.8}	45	
1.4	21	20	19.6{ 2.0}	50	
1.4	21	22	21.6{ 2.2}	55	
1.4	21	24	23.5{ 2.4}	60	
1.5	29.7	26	25.5{ 2.6}	65	
1.5	29.7	28	27.5{ 2.8}	70	
1.5	29.7	32	31.4{ 3.2}	80	
1.6	40	36	35.3{ 3.6}	90	
1.5	10	8	23.5{ 2.4}	WL18—20	
1.6	12	10	29.4{ 3.0}	25	
1.6	12	12	35.3{ 3.6}	30	
1.7	16.2	14	41.2{ 4.2}	35	
1.7	16.2	16	47.1{ 4.8}	40	
1.8	19.8	18	53.0{ 5.4}	45	
1.8	19.8	20	58.8{ 6.0}	50	
1.8	19.8	22	64.7{ 6.6}	55	
1.8	19.8	24	70.6{ 7.2}	60	
2.0	32	26	76.5{ 7.8}	65	
2.0	32	28	82.4{ 8.4}	70	
2.0	32	32	94.1{ 9.6}	80	
2.2	43	36	105.9{ 10.8}	90	
2.2	43	40	117.7{ 12.0}	100	
1.6	10.4	8	23.5{ 2.4}	WL20—20	
1.6	10.4	10	29.4{ 3.0}	25	
1.7	12.8	12	35.3{ 3.6}	30	
1.7	12.8	14	41.2{ 4.2}	35	
1.8	15.8	16	47.1{ 4.8}	40	
1.8	15.8	18	53.0{ 5.4}	45	
1.8	15.8	20	58.8{ 6.0}	50	
1.8	15.8	22	64.7{ 6.6}	55	
2.0	24	24	70.6{ 7.2}	60	
2.0	24	26	76.5{ 7.8}	65	
2.0	24	28	82.4{ 8.4}	70	
2.2	37.4	32	94.1{ 9.6}	80	
2.2	37.4	36	105.9{ 10.8}	90	
2.2	37.4	40	117.7{ 12.0}	100	
1.7	10.8	8	23.5{ 2.4}	WL22—20	
1.8	13.3	10	29.4{ 3.0}	25	
1.8	13.3	12	35.3{ 3.6}	30	
1.8	13.3	14	41.2{ 4.2}	35	
2.0	20	16	47.1{ 4.8}	40	
2.0	20	18	53.0{ 5.4}	45	
2.0	20	20	58.8{ 6.0}	50	
2.0	20	22	64.7{ 6.6}	55	
2.2	28.6	24	70.6{ 7.2}	60	
2.2	28.6	26	76.5{ 7.8}	65	
2.2	28.6	28	82.4{ 8.4}	70	
2.2	28.6	32	94.1{ 9.6}	80	
2.3	34.5	36	105.9{ 10.8}	90	
2.3	34.5	40	117.7{ 12.0}	100	
2.1	14	12	35.3{ 3.6}	WL27—30	
2.1	14	14	41.2{ 4.2}	35	
2.3	19	16	47.1{ 4.8}	40	
2.3	19	18	53.0{ 5.4}	45	
2.3	19	20	58.8{ 6.0}	50	
2.3	19	22	64.7{ 6.6}	55	
2.5	28	24	70.6{ 7.2}	60	
2.5	28	26	76.5{ 7.8}	65	
2.6	34.5	28	82.4{ 8.4}	70	
2.6	34.5	32	94.1{ 9.6}	80	
2.8	46.7	36	105.9{ 10.8}	90	
2.8	46.7	40	117.7{ 12.0}	100	

●Load calculation method : N (load) = N/mm (spring constant) × F (deflection)
(International units) N = N/mm × Fmm
kgf = kgf/mm × Fmm
(kgf = N × 0.101972)

- No grinding on both ends of * marked WL type springs.
- The solid height values are reference only. There may be some variations depending on lots.
- Operation frequency : 1 million times.
- Product Outline
- Directions and precautions for coil springs

■WT : Fmax. (Allowable deflection) = L×40% (L×35%)

The quantity discount rate is also applicable to alteration cost.
All price & lead time are to be quoted.

d	Solid height	F max.	N{kgf} max.	Catalog No. Type D—L	U/Price Q'ty : 1~9
0.3	1.73	2	2.9{0.3}	WT 3— 5*	Quotation
0.4	5	4	5.9{0.6}	10*	
0.45	8.78	6	8.8{0.9}	15*	
0.45	8.78	8	11.8{1.2}	20*	
0.5	14.5	10	14.7{1.5}	25*	
0.4	2.7	2	2.9{0.3}	WT 4— 5*	
0.4	2.7	4	5.9{0.6}	10*	
0.5	6.5	6	8.8{0.9}	15*	
0.55	9.63	8	11.8{1.2}	20	
0.55	9.63	10	14.7{1.5}	25	
0.6	15	12	17.7{1.8}	30	
0.6	15	14	20.6{2.1}	35	
0.65	22.1	16	23.5{2.4}	40	
0.45	2.36	2	3.9{0.4}	WT 5— 5*	
0.5	3.25	4	7.8{0.8}	10*	
0.6	6.3	6	11.8{1.2}	15	
0.6	6.3	8	15.7{1.6}	20	
0.7	12.6	10	19.6{2.0}	25	
0.7	12.6	12	23.5{2.4}	30	
0.75	17.3	14	27.5{2.8}	35	
0.75	17.3	14	31.4{3.2}	(40)	
0.8	24	15.8	35.3{3.6}	(45)	
0.8	24	17.5	34.3{3.5}	(50)	
0.85	32.3	19.3	37.8{3.9}	(55)	
0.85	32.3	21	41.2{4.2}	(60)	
0.85	34	22.7	44.5{4.5}	(65)	
0.9	44.6	24.5	48.1{4.9}	(70)	
0.5	2.38	2	3.9{0.4}	WT 6— 5*	
0.6	4.35	4	7.8{0.8}	10	
0.6	4.35	6	11.8{1.2}	15	
0.7	7.7	8	15.7{1.6}	20	
0.7	7.7	10	19.6{2.0}	25	
0.8	14	12	23.5{2.4}	30	
0.8	14	14	27.5{2.8}	35	
0.85	18.7	16	31.4{3.2}	40	
0.85	18.7	18	35.3{3.6}	45	
0.9	24.8	20	39.2{4.0}	50	
0.9	24.8	19	37.8{3.9}	(55)	
0.9	24.8	21	41.2{4.2}	(60)	
0.9	26.1	22.7	44.5{4.5}	(65)	
1	43	24.5	48.1{4.9}	(70)	
1	43	28	54.9{5.6}	(80)	

d	Solid height	F max.	N{kgf} max.	Catalog No. Type D—L	U/Price Q'ty : 1~9
0.7	4.38	4	7.8{0.8}	WT 8—10	Quotation
0.8	6.8	6	11.8{1.2}	15	
0.8	6.8	8	15.7{1.6}	20	
0.8	6.8	10	19.6{2.0}	25	
0.9	10.8	12	23.5{2.4}	30	
0.9	10.8	14	27.5{2.8}	35	
1	17.5	16	31.4{3.2}	40	
1	17.5	18	35.3{3.6}	45	
1	17.5	20	39.2{4.0}	50	
1.1	27.5	22	43.1{4.4}	55	
1.1	27.5	24	47.1{4.8}	60	
1.1	27.5	26	51.0{5.2}	65	
1.1	27.5	28	54.9{5.6}	70	
1.2	42	32	62.8{6.4}	80	
0.85	5.53	4	7.8{0.8}	WT10—10	
0.9	6.75	6	11.8{1.2}	15	
0.9	6.75	8	15.7{1.6}	20	
1	10	10	19.6{2.0}	25	
1	10	12	23.5{2.4}	30	
1	10	14	27.5{2.8}	35	
1	10	16	31.4{3.2}	40	
1.1	14.3	18	35.3{3.6}	45	
1.1	14.3	20	39.2{4.0}	50	
1.2	21.6	22	43.1{4.4}	55	
1.2	21.6	24	47.1{4.8}	60	
1.2	21.6	26	51.0{5.2}	65	
1.3	32.5	28	54.9{5.6}	70	
1.3	32.5	32	62.8{6.4}	80	
1	6	6	11.8{1.2}	WT13—15	
1.1	8.25	8	15.7{1.6}	20	
1.1	8.25	10	19.6{2.0}	25	
1.2	11.1	12	23.5{2.4}	30	
1.2	11.1	14	27.5{2.8}	35	
1.2	11.1	16	31.4{3.2}	40	
1.2	11.1	18	35.3{3.6}	45	
1.3	15.6	20	39.2{4.0}	50	
1.3	15.6	22	43.1{4.4}	55	
1.3	15.6	24	47.1{4.8}	60	
1.4	21	26	51.0{5.2}	65	
1.4	21	28	54.9{5.6}	70	
1.4	21	32	62.8{6.4}	80	
1.2	7.5	6	11.8{1.2}	WT16—15	
1.3	9.43	8	15.7{1.6}	20	
1.4	12.6	10	19.6{2.0}	25	
1.4	12.6	12	23.5{2.4}	30	
1.4	12.6	14	27.5{2.8}	35	
1.4	12.6	16	31.4{3.2}	40	
1.6	22.4	18	35.3{3.6}	45	
1.6	22.4	20	39.2{4.0}	50	
1.6	22.4	22	43.1{4.4}	55	
1.7	28.9	24	47.1{4.8}	60	
1.7	28.9	26	51.0{5.2}	65	
1.7	28.9	28	54.9{5.6}	70	
1.7	28.9	32	62.8{6.4}	80	

d	Solid height	F max.	N{kgf} max.	Catalog No. Type D—L	U/Price Q'ty : 1~9
1.6	10.8	8	31.4{ 3.2}	WT18—20	Quotation
1.7	13.6	10	39.2{ 4.0}	25	
1.7	13.6	12	47.1{ 4.8}	30	
1.7	13.6	14	54.9{ 5.6}	35	
1.8	16.7	16	62.8{ 6.4}	40	
1.9	20.5	18	70.6{ 7.2}	45	
1.9	20.5	20	78.5{ 8.0}	50	
2	26	22	86.3{ 8.8}	55	
2	26	24	94.1{ 9.6}	60	
2	26	26	102.0{10.4}	65	
2	26	28	109.8{11.2}	70	
2.1	31.5	32	125.5{12.8}	80	
1.8	11.3	8	31.4{ 3.2}	WT22—20	
1.8	11.3	10	39.2{ 4.0}	25	
1.9	13.3	12	47.1{ 4.8}	30	
1.9	13.3	14	54.9{ 5.6}	35	
2	16	16	62.8{ 6.4}	40	
2.1	19.5	18	70.6{ 7.2}	45	
2.1	19.5	20	78.5{ 8.0}	50	
2.3	28.2	22	86.3{ 8.8}	55	
2.3	28.2	24	94.1{ 9.6}	60	
2.3	28.2	26	102.0{10.4}	65	
2.3	28.2	28	109.8{11.2}	70	
2.4	33.6	32	125.5{12.8}	80	
2.1	13.2	12	47.1{ 4.8}	WT27—30	
2.3	17.9	14	54.9{ 5.6}	35	
2.3	17.9	16	62.8{ 6.4}	40	
2.4	20.4	18	70.6{ 7.2}	45	
2.6	28.6	20	78.5{ 8.0}	50	
2.6	28.6	22	86.3{ 8.8}	55	
2.6	28.6	24	94.1{ 9.6}	60	
2.6	28.6	26	102.0{10.4}	65	
2.8	39.2	28	109.8{11.2}	70	
2.8	39.2	32	125.5{12.8}	80	

●Load calculation method : N (load) = N/mm (spring constant) × F (deflection)
(International units) N = N/mm × Fmm
kgf = kgf/mm × Fmm
(kgf = N × 0.101972)

Allowable deflection for (L) size
WT5 —40Fmax = L×35%
WT5 —45Fmax = L×35%
WT5 —50Fmax = L×35%
WT5 —55Fmax = L×35%
WT5 —60Fmax = L×35%
WT5 —65Fmax = L×35%
WT5 —70Fmax = L×35%
WT6 —55Fmax = L×35%
WT6 —60Fmax = L×35%
WT6 —65Fmax = L×35%
WT6 —70Fmax = L×35%
WT6 —80Fmax = L×35%

- No grinding on both ends of * marked WT type springs.
- The solid height values are reference only. There may be some variations depending on lots.
- Operation frequency : 1 million times.
- Product Outline
- Directions and precautions for coil springs

Stocks Availability Subjected to Prior Sales.

Stocks Availability Subjected to Prior Sales.