

Please refer to website for current pricing.

Round Wire Springs

-WT / WM Outer Diameter Selectable-



Order
Example

Part Number
WT13-60



Days
to Ship

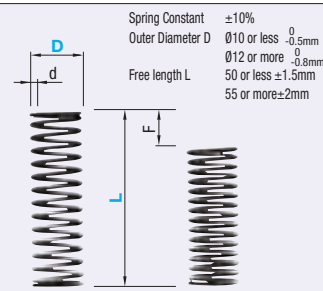


Volume Discount Rate

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. **P27**

WT
WM



Spring Constant $\pm 10\%$
Outer Diameter D $\begin{matrix} \text{Ø10 or less} & 0-0.5\text{mm} \\ \text{Ø12 or more} & 0-0.8\text{mm} \\ \text{50 or less } \pm 1.5\text{mm} \\ \text{55 or more } \pm 2\text{mm} \end{matrix}$
Free length L

RoHS

Material: Spring Steel (ASTM A228)

Spring Constant $\text{D12 and 14 for WY Type and D12,14 and 20 for WT Type are not available.}$

Type	WY	WR	WF	WT	WM	WH	WB
D				0.5(0.05)			
2				1.5	2.0	2.9(0.3)	3.9(0.4)
3				[0.15]	[0.2]		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})		
6							
8						N/mm 9.8 (kgf/mm {1.0})	N/mm 19.6 (kgf/mm {2.0})
10	N/mm 0.2 (kgf/mm {0.02})						
12							
13							
14							
16							
18		N/mm 0.5 (kgf/mm {0.05})	N/mm 1.0 (kgf/mm {0.1})	N/mm 3.5 (kgf/mm {0.3})	N/mm 4.9 (kgf/mm {0.4})	N/mm 14.7 (kgf/mm {1.5})	29.4(3.0)
20							
22							
27							
Fmax.	F=Lx75%	F=Lx60%	F=Lx45%	F=Lx40%	F=Lx35%	F=Lx30%	F=Lx25%

WT:Fmax. (Allowable Deflection) = L x 40% (L x 35%)

d	Solid Length	F max.	Load N(kgf) max.	Part Number	Unit Price
Type D-L	Qty. 1-9				
WT3-5*					
0.3	1.73	2	2.9(0.3)	10*	
0.4	5	4	5.9(0.6)	15*	
0.45	8.78	6	8.8(0.9)	20*	
0.45	8.78	8	11.8(1.2)	25*	
0.5	14.5	10	14.7(1.5)	30	
0.4	2.7	2	2.9(0.3)	40	
0.4	2.7	4	5.9(0.6)	50	
0.5	6.5	6	8.8(0.9)	60	
0.55	9.63	8	11.8(1.2)	70	
0.55	9.63	10	14.7(1.5)	80	
0.6	15	12	17.7(1.8)		
0.6	15	14	20.6(2.1)		
0.65	22.1	16	23.5(2.4)		
0.45	2.36	2	3.9(0.4)		
0.5	3.25	4	7.8(0.8)		
0.6	6.3	6	11.8(1.2)		
0.6	6.3	8	15.7(1.6)		
0.7	12.6	10	19.6(2.0)		
0.7	12.6	12	23.5(2.4)		
0.75	17.3	14	27.5(2.8)		
0.75	17.3	16	31.4(3.2)		
0.8	24	18	35.3(3.6)		
0.8	24	20	39.2(4.0)		
0.85	32.3	22	43.1(4.4)		
0.85	32.3	24	47.1(4.8)		
0.85	32.3	26	51.0(5.2)		
0.9	44.6	28	54.9(5.6)		
0.5	2.38	2	3.9(0.4)		
0.6	4.35	4	7.8(0.8)		
0.6	4.35	6	11.8(1.2)		
0.7	7.7	8	15.7(1.6)		
0.7	7.7	10	19.6(2.0)		
0.8	14	12	23.5(2.4)		
0.8	14	14	27.5(2.8)		
0.85	18.7	16	31.4(3.2)		
0.85	18.7	18	35.3(3.6)		
0.9	24.8	20	39.2(4.0)		
0.9	24.8	22	43.1(4.4)		
0.9	24.8	24	47.1(4.8)		
0.9	24.8	26	51.0(5.2)		
0.9	26.1	28	54.9(5.6)		
1	43	30	58.8(6.0)		
1	43	32	62.8(6.4)		

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

Allowable Deflection of (L) Size

WT5-40Fmax.= L x 35%
WT5-45Fmax.= L x 35%
WT5-50Fmax.= L x 35%
WT5-55Fmax.= L x 35%
WT5-60Fmax.= L x 35%
WT5-65Fmax.= L x 35%
WT5-70Fmax.= L x 35%
WT6-55Fmax.= L x 35%
WT6-60Fmax.= L x 35%
WT6-65Fmax.= L x 35%
WT6-70Fmax.= L x 35%
WT6-80Fmax.= L x 35%

Both ends of * marked WT Type springs are not ground.

d	Solid Length	F max.	Load N(kgf) max.	Part Number	Unit Price
Type D-L	Qty. 1-9				
WT18-20					
1.6	10.8	8	31.4(3.2)	25	
1.7	13.6	10	39.2(4.0)	30	
1.7	13.6	12	47.1(4.8)	35	
1.7	13.6	14	54.9(5.6)	40	
1.8	16.7	16	62.8(6.4)	45	
1.9	20.5	18	70.6(7.2)	50	
1.9	20.5	20	78.5(8.0)	55	
2	26	22	86.3(8.8)	60	
2	26	24	94.1(9.6)	65	
2	26	26	102.0(10.4)	70	
2	26	28	109.8(11.2)	80	
2.1	31.5	32	125.5(12.8)		
1.8	11.3	8	31.4(3.2)		
1.8	11.3	10	39.2(4.0)		
1.9	13.3	12	47.1(4.8)		
1.9	13.3	14	54.9(5.6)		
2	16	16	62.8(6.4)		
2.1	19.5	18	70.6(7.2)		
2.1	19.5	20	78.5(8.0)		
2.3	28.2	22	86.3(8.8)		
2.3	28.2	24	94.1(9.6)		
2.3	28.2	26	102.0(10.4)		
2.3	28.2	28	109.8(11.2)		
2.4	33.6	32	125.5(12.8)		
2.1	13.2	12	47.1(4.8)		
2.3	17.9	14	54.9(5.6)		
2.3	17.9	16	62.8(6.4)		
2.4	20.4	18	70.6(7.2)		
2.6	28.6	20	78.5(8.0)		
2.6	28.6	22	86.3(8.8)		
2.6	28.6	24	94.1(9.6)		
2.6	28.6	26	102.0(10.4)		
2.8	39.2	28	109.8(11.2)		
2.8	39.2	32	125.5(12.8)		

WM:Fmax. (Allowable Deflection) = L x 35%

d	Solid Length	F max.	Load N(kgf) max.	Part Number	Unit Price
Type D-L	Qty. 1-9				
WM 3-5*					
0.35	2.5	1.8	3.4(0.4)	10*	
0.38	3.3	3.5	6.9(0.7)	15*	
0.45	7	5.3	10.3(1.1)	20*	
0.5	11.5	7	13.7(1.4)	25*	
0.5	11.5	7.5	14.7(1.5)	(25)	
0.55	20.4	9	17.7(1.8)	(30)	
0.4	2.3	1.7	3.9(0.4)		
0.45	3.4	3.5	6.9(0.7)		
0.5	5.1	5.2	10.8(1.1)		
0.55	7.7	7	13.7(1.4)		
0.6	11.7	8.7	17.7(1.8)		
0.6	11.7	10.5	20.6(2.1)		
0.65	17.6	12.2	24.0(2.5)		
0.65	17.6	12	23.5(2.4)		
0.5	2.8	1.7	4.9(0.5)		
0.6	4.2	3.5	9.8(1.0)		
0.65	6.5	5.2	14.7(1.5)		
0.65	6.5	7	20.6(2.1)		
0.7	9.1	8.7	25.5(2.6)		
0.75	12.7	10.5	30.4(3.1)		
0.8	17.4	12.2	35.3(3.6)		
0.85	23.8	14	41.2(4.2)		
0.85	23.8	15.8	46.1(4.7)		
0.9	23.8	15	43.5(4.5)		
0.9	30	16.5	49.0(5.0)		
0.9	30	18	53.0(5.4)		
0.9	30	17.6	52.0(5.3)		
0.9	30	19.6	58.8(6.0)		
0.55	2.8	1.7	4.9(0.5)		
0.65	4.7	3.5	9.8(1.0)		
0.75	8	5.2	14.7(1.5)		
0.75	8	7	20.6(2.1)		
0.85	13.6	8.7	25.5(2.6)		
0.85	13.6	10.5	30.4(3.1)		
0.9	18	12.2	35.3(3.6)		
0.9	18	14	41.2(4.2)		
0.9	18	15.8	46.1(4.7)		
0.9	18	17.5	51.0(5.2)		
1.0	31	19.2	55.9(5.7)		
1.0	31	18	53.0(5.4)		
1.0	31	18.8	54.9(5.6)		
1.1	47.3	20	58.8(6.0)		
1.1	48.4	22.4	65.9(6.7)		
0.75	4.2	3.5	9.8(1.0)		
0.9	8.5	5.2	14.7(1.5)		
0.9	8.5	7	20.6(2.1)		
0.9	8.5	8.7	25.5(2.6)		
0.9	8.5	10.5	30.4(3.1)		
1.0	13	12.2	35.3(3.6)		
1.0	13	14	41.2(4.2)		
1.1	19.8	15.8	46.1(4.7)		
1.1	19.8	17.5	51.0(5.2)		
1.2	31.2	19.2	55.9(5.7)		
1.2	31.2	21	61.8(6.3)		
1.2	31.2	22.7	64.7(6.6)		
1.2	31.2	24.5	71.6(7.3)		
1.3	44.2	28	82.4(8.4)		

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

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**

Allowable Deflection of (L) Size
WM3-25Fmax.= L x 30%
WM3-30Fmax.= L x 30%
WM4-40Fmax.= L x 30%
WM5-50Fmax.= L x 30%
WM5-55Fmax.= L x 30%
WM5-60Fmax.= L x 30%
WM5-65Fmax.= L x 27%
WM5-70Fmax.= L x 28%
WM6-60Fmax.= L x 30%
WM6-65Fmax.= L x 29%
WM6-70Fmax.= L x 28%
WM6-80Fmax.= L x 28%

Both ends of * marked WM Type springs are not ground.

d	Solid Length	F max.	Load N(kgf) max.	Part Number Type D-L	Unit Price Qty. 1-9	
1.3	7.8	5.2	14.7(1.5)	WM 16-15	15	
1.4	9.8	7	20.6(2.1)		20	
1.5	12.5	8.7	25.5(2.6)		25	
1.5	12.5	10.5	30.4(3.1)		30	
1.6	15	12.2	35.3(3.6)		35	
1.6	15	14	41.2(4.2)		40	
1.7	20.4	15.8	46.1(4.7)		45	
1.7	20.4	17.5	51.0(5.2)		50	
1.8	27	19.2	55.9(5.7)		55	
1.8	27	21	61.8(6.3)		60	
1.8	27	22.7	64.7(6.6)	WM 18-20	65	
1.8	27	24.5	71.6(7.3)		70	
1.8	27	28	82.4(8.4)		80	
1.9	34.2	31.5	92.7(9.5)		90	
1.7	11.9	7	34.3(3.5)		WM 20-20	20
1.8	14.4	8.7	42.2(4.3)			25
1.8	14.4	10.5	51.0(5.2)			30
1.8	14.4	12.2	59.8(6.1)			35
1.8	14.4	14	68.6(7.0)			40
2.0	22	15.8	77.5(7.9)			45
2.0	22	17.5	85.3(8.7)	50		
2.0	22	19.2	94.1(9.6)	55		
2.0	22	21	103.0(10.5)	60		
2.2	34.1	22.7	110.8(11.3)	65		
2.2	34.1	24.5	119.6(12.2)	70		
2.2	34.1	28	137.3(14.0)	80		
2.3	41.4	31.5	154.0(15.7)	90		
2.3	41.4	35	171.6(17.5)	100		
1.8	11.7	7	34.3(3.5)	WM 22-20	20	
1.8	11.7	8.7	42.2(4.3)		25	
1.9	14.3	10.5	51.0(5.2)		30	
1.9	14.3	12.2	59.8(6.1)		35	
1.9	14.3	14	68.6(7.0)		40	
2.0	17	15.8	77.5(7.9)		45	
2.0	17	17.5	85.3(8.7)		50	
2.2	24.8	19.2	94.1(9.6)		55	
2.2	24.8	21	103.0(10.5)		60	
2.2	24.8	22.7	110.8(11.3)		65	
2.2	24.8	24.5	119.6(12.2)	70		
2.4	36	28	137.3(14.0)	80		
2.4	36	31.5	154.0(15.7)	90		
2.4	36	35	171.6(17.5)	100		
1.9	12	7	34.3(3.5)	WM 27-30	20	
2.0	14	8.7	42.2(4.3)		25	
2.0	14	10.5	51.0(5.2)		30	
2.0	14	12.2	59.8(6.1)		35	
2.0	14	14	68.6(7.0)		40	
2.3	23	15.8	77.5(7.9)		45	
2.3	23	17.5	85.3(8.7)		50	
2.3	23	19.2	94.1(9.6)		55	
2.3	23	21	103.0(10.5)		60	
2.4	30	22.7	110.8(11.3)		65	
2.4	30	24.5	119.6(12.2)	70		
2.4	30	28	137.3(14.0)	80		
2.6	40	31.5	154.0(15.7)	90		
2.6	40	35	171.6(17.5)	100		
2.3	14	10.5	51.0(5.2)	WM 27-30	30	
2.4	17	12.2	59.8(6.1)		35	
2.4	17	14	68.6(7.0)		40	
2.4	18	15.8	77.5(7.9)		45	
2.6	23	17.5	85.3(8.7)		50	
2.6	23	19.2	94.1(9.6)		55	
2.6	23	21	103.0(10.5)		60	
2.8	31	22.7	110.8(11.3)		65	
2.8	31	24.5	119.6(12.2)		70	
2.8	31	28	137.3(14.0)		80	
3.0	43.5	31.5	154.0(15.7)	90		
3.0	43.5	35	171.6(17.5)	100		