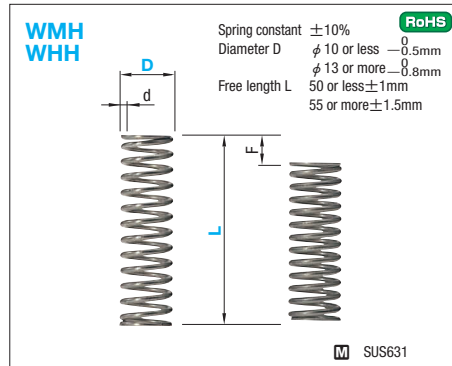


HEAT PROOF WIRE SPRINGS

—WMH (40% DEFLECTION) · WHH (35% DEFLECTION)— ●Heat resistant up to 200 °C

⚠ Non JIS material definition is listed on P.1351 - 1352



Spring constant				
Type	WFH	WLH	WMH	WHH
D				
4				
5			2.0{0.2}	2.9{0.3}
6				
8	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 5.9 {kgf/mm} {0.6}
10				
13				
16				N/mm 9.8 {kgf/mm} {1.0}
18	1.0{0.1}	2.9{0.3}	4.9{0.5}	14.7{1.5}

Fmax. F=L×60% F=L×50% F=L×40% F=L×35%



Part Number
WMH13-60
WHH13-60

Quotation

Quotation

●N (load)=N/mm (spring constant)×Fmm (deflection)
 Load {kgf}=Load N×0.101972

- ⚠ No grinding on both ends of springs marked with *
- ⚠ The solid height values are for reference only. There may be some dispersions depending on the lot.
- ⚠ Times used: 1 million
- ⚠ Instructions and notes for coil springs **P.1221**
- ⚠ Coil springs marked with ● have spring seat(s) on one end or both ends in order to reduce excessive stress or potential breakage when deflecting.
 (The seat becomes 4 rolling extent from 0.5)
 Solid height/spring constant values are the same as those without spring seats.



■WMH:Fmax.(allowable deflection)=L×40% ⚠ Fmax.(Allowable deflection) is due to the measurement at normal temperature (40°C). Refer to P.1220 for the maximum allowable deflection at high temperature (150°C/200°C).

d	Solid Height	F max.	N{kgf} max.	Part Number	U/Price
0.4	2	2	3.9{0.4}	WMH4-5*	1~19
0.5	5	4	7.8{0.8}	10*	
0.55	7.2	6	11.8{1.2}	15	
0.6	10	8	15.7{1.6}	20	
0.6	11.5	10	19.6{2.0}	25	
0.6	15	12	23.5{2.4}	30	
0.65	17.5	14	27.5{2.8}	35	
0.65	20	16	31.4{3.2}	40	
0.45	2.3	2	3.9{0.4}	WMH5-5*	1~19
0.6	5.4	4	7.8{0.8}	10*	
0.65	7.8	6	11.8{1.2}	15	
0.65	9.1	8	15.7{1.6}	20	
0.7	11.2	10	19.6{2.0}	25	
0.7	14	12	23.5{2.4}	30	
0.7	14	14	27.5{2.8}	35	
0.8	21.6	16	31.4{3.2}	40	
0.8	22.5	18	35.3{3.6}	45	
0.8	26	20	39.2{4.0}	50	
0.5	2	2	5.9{0.6}	WMH6-5*	1~19
0.7	5	4	11.8{1.2}	10*	
0.7	8	6	17.7{1.8}	15*	
0.8	10	8	23.5{2.4}	20	
0.8	12	10	29.4{3.0}	25*	
0.9	16	12	35.3{3.6}	30	
0.9	18.5	14	41.2{4.2}	35*	
0.9	20.5	16	47.1{4.8}	40*	
0.9	25	18	53.0{5.4}	45*	
1.0	28	20	58.8{6.0}	50	
1.0	28	22	64.7{6.6}	55	
1.0	33	24	70.6{7.2}	60*	
1.0	33	26	76.5{7.8}	65*	
1.0	39	28	82.4{8.4}	70*	
1.1	44	32	94.1{9.6}	80	

d	Solid Height	F max.	N{kgf} max.	Part Number	U/Price
0.8	4.5	4	11.8{ 1.2}	WMH 8-10	1~19
0.9	7.5	6	17.7{ 1.8}	15	
0.9	9.5	8	23.5{ 2.4}	20*	
1.0	12	10	29.4{ 3.0}	25	
1.0	15	12	35.3{ 3.6}	30*	
1.1	18	14	41.2{ 4.2}	35	
1.1	21	16	47.1{ 4.8}	40*	
1.1	24	18	53.0{ 5.4}	45*	
1.2	27	20	58.8{ 6.0}	50	
1.2	28	22	64.7{ 6.6}	55	
1.2	32	24	70.6{ 7.2}	60	
1.2	32	26	76.5{ 7.8}	65*	
1.2	37	28	82.4{ 8.4}	70*	
1.2	44	32	94.1{ 9.6}	80*	
0.9	4.5	4	11.8{ 1.2}	WMH10-10	1~19
1.0	6.5	6	17.7{ 1.8}	15	
1.1	9.5	8	23.5{ 2.4}	20	
1.1	12.5	10	29.4{ 3.0}	25*	
1.1	15	12	35.3{ 3.6}	30*	
1.2	18.5	14	41.2{ 4.2}	35	
1.2	20	16	47.1{ 4.8}	40*	
1.2	22	18	53.0{ 5.4}	45*	
1.2	24	20	58.8{ 6.0}	50	
1.4	27	22	64.7{ 6.6}	55	
1.4	31	24	70.6{ 7.2}	60	
1.4	32	26	76.5{ 7.8}	65	
1.4	34	28	82.4{ 8.4}	70*	
1.4	35	32	94.1{ 9.6}	80	
1.1	5	6	14.7{ 1.5}	WMH13-15	1~19
1.2	8	8	23.5{ 2.4}	20	
1.2	10	10	29.4{ 3.0}	25*	
1.4	13.5	12	35.3{ 3.6}	30	
1.4	15	14	41.2{ 4.2}	35	
1.4	18	16	47.1{ 4.8}	40*	
1.4	21	18	53.0{ 5.4}	45*	
1.6	26	20	58.8{ 6.0}	50	
1.6	27	22	64.7{ 6.6}	55	
1.6	30	24	70.6{ 7.2}	60*	
1.6	30	26	76.5{ 7.8}	65*	
1.6	35	28	82.4{ 8.4}	70*	
1.6	38	32	94.1{ 9.6}	80*	
1.8	48	36	105.9{10.8}	90	

d	Solid Height	F max.	N{kgf} max.	Part Number	U/Price
1.2	5.5	6	17.7{ 1.8}	WMH16-15	1~19
1.4	9	8	23.5{ 2.4}	20	
1.4	11	10	29.4{ 3.0}	25*	
1.6	15	12	35.3{ 3.6}	30	
1.6	18	14	41.2{ 4.2}	35*	
1.6	21	16	47.1{ 4.8}	40*	
1.8	24	18	53.0{ 5.4}	45	
1.8	24	20	58.8{ 6.0}	50	
1.8	25	22	64.7{ 6.6}	55	
1.8	30	24	70.6{ 7.2}	60*	
1.8	27	26	76.5{ 7.8}	65*	
1.8	35	28	82.4{ 8.4}	70*	
2.0	42	32	94.1{ 9.6}	80	
2.0	48	36	105.9{10.8}	90	
1.6	8	8	39.2{ 4.0}	WMH18-20	1~19
1.8	13	10	49.0{ 5.0}	25	
1.8	16	12	58.8{ 6.0}	30*	
2.0	19	14	68.6{ 7.0}	35	
2.0	21	16	78.5{ 8.0}	40*	
2.1	24	18	88.3{ 9.0}	45	
2.1	26	20	98.0{10.0}	50*	
2.1	28	22	107.9{11.0}	55*	
2.1	30	24	117.7{12.0}	60*	
2.3	35	26	127.5{13.0}	65	
2.3	36	28	137.3{14.0}	70	
2.3	42	32	156.9{16.0}	80*	
2.3	51	36	176.5{18.0}	90*	
2.5	56	40	196.1{20.0}	100*	

■WHH:Fmax.(allowable deflection)=L×35% ⚠ Fmax.(Allowable deflection) is due to the measurement at normal temperature (40°C). Refer to P.1220 for the maximum allowable deflection at high temperature (150°C/200°C).

d	Solid Height	F max.	N{kgf} max.	Part Number	U/Price
0.45	2.3	1.7	5.0{ 0.5}	WHH4-5*	1~19
0.5	4.5	3.5	10.3{ 1.1}	10*	
0.6	9	5.2	15.3{ 1.6}	15	
0.65	12	7	20.6{ 2.1}	20	
0.65	14.5	8.7	25.6{ 2.6}	25	
0.7	18	10.5	30.9{ 3.2}	30	
0.5	2.5	1.7	5.0{ 0.5}	WHH5-5*	1~19
0.65	6	3.5	10.3{ 1.1}	10*	
0.7	9	5.2	15.3{ 1.6}	15	
0.7	10.5	7	20.6{ 2.1}	20	
0.8	14.8	8.7	25.6{ 2.6}	25	
0.8	16.8	10.5	30.9{ 3.2}	30	
0.8	19.2	12.2	35.9{ 3.7}	35	
0.8	21	14	41.2{ 4.2}	40	
0.6	2.4	1.8	10.8{ 1.1}	WHH6-5*	1~19
0.8	5.5	3.5	20.6{ 2.1}	10	
0.9	9	5.3	31.4{ 3.2}	15	
0.9	12	7	41.2{ 4.2}	20*	
1.0	15	8.8	52.0{ 5.3}	25	
1.0	17.5	10.5	61.8{ 6.3}	30*	
1.0	19.5	12.3	72.6{ 7.4}	35*	
1.0	23.5	14	82.4{ 8.4}	40*	
1.1	25	15.8	93.2{ 9.5}	45	
1.1	29	17.5	103.0{10.5}	50*	
1.1	31	19.2	113.0{11.5}	55*	
1.1	36	21	123.6{13.6}	60*	
1.2	39	22.7	133.6{13.6}	65	
1.2	40	24.5	144.2{14.7}	70	
1.2	40	24.5	144.2{14.7}	70	

d	Solid Height	F max.	N{kgf} max.	Part Number	U/Price
0.9	5	3.5	20.6{ 2.1}	WHH 8-10	1~19
1.0	7.5	5.3	31.4{ 3.2}	15	
1.1	10	7	41.2{ 4.2}	20	
1.1	13	8.8	52.0{ 5.3}	25*	
1.2	15	10.5	61.8{ 6.3}	30	
1.2	18	12.3	72.6{ 7.4}	35*	
1.2	22	14	82.4{ 8.4}	40*	
1.2	25	15.8	93.2{ 9.5}	45*	
1.4	30	17.5	103.0{10.5}	50	
1.4	31	19.2	113.0{11.5}	55	
1.4	35	21	123.6{12.6}	60*	
1.4	37	22.7	133.6{13.6}	65*	
1.4	40	24.5	144.2{14.7}	70*	
1.5	47	28	164.8{16.8}	80	
1.0	5	3.5	20.6{ 2.1}	WHH10-10	1~19
1.1	8.5	5.3	31.4{ 3.2}	15*	
1.2	10.5	7	41.2{ 4.2}	20*	
1.2	14	8.8	52.0{ 5.3}	25*	
1.4	16	10.5	61.8{ 6.3}	30	
1.4	19	12.3	72.6{ 7.4}	35*	
1.4	22	14	82.4{ 8.4}	40*	
1.4	26	15.8	93.2{ 9.5}	45*	
1.6	30	17.5	103.0{10.5}	50	
1.6	30	19.2	113.0{11.5}	55	
1.6	35	21	123.6{12.6}	60*	
1.6	34	22.7	133.6{13.6}	65*	
1.6	41	24.5	144.2{14.7}	70*	
1.8	47	28	164.8{16.8}	80	
1.4	8.5	5.3	52.0{ 5.3}	WHH13-15	1~19
1.6	10	7	68.6{ 7.0}	20	
1.6	14.5	8.8	86.3{ 8.8}	25*	
1.8	16.5	10.5	103.0{10.5}	30	
1.8	20	12.3	120.6{12.3}	35*	
1.8	24	14	137.3{14.0}	40*	
2.0	26	15.8	154.9{15.8}	45	
2.0	28	17.5	171.6{17.5}	50	
2.0	28	19.2	188.3{19.2}	55	
2.0	34	21	205.9{21.0}	60*	
2.1	36	22.7	222.6{22.7}	65	
2.1	42	24.5	240.3{24.5}	70*	
2.1	47	28	274.6{28.0}	80*	
2.3	55	31.5	308.9{31.5}	90	

d	Solid Height	F max.	N{kgf} max.	Part Number	U/Price
1.6	6	5.3	52.0{ 5.3}	WHH16-15	1~19
1.8	10	7	68.6{ 7.0}	20	
2.0	14.5	8.8	86.3{ 8.8}	25	
2.0	16.5	10.5	103.0{10.5}	30*	
2.1	18.5	12.3	120.6{12.3}	35	
2.1	24	14	137.3{14.0}	40*	
2.1	27	15.8	154.9{15.8}	45*	
2.3	28	17.5	171.6{17.5}	50	
2.3	30	19.2	188.3{19.2}	55	
2.3	34	21	205.9{21.0}	60	
2.3	33	22.7	222.6{22.7}	65	
2.5	42	24.5	240.3{24.5}	70	
2.5	44	28	274.6{28.0}	80	
2.6	5				