

丸線コイルスプリング ―WH(30%タワミ)・WB(25%タワミ)―

## 圆线螺旋弹簧

―WH(30%压缩量)・WB(25%压缩量)―



Order  
订货范例

Catalog No.  
**WB 13-60**



Delivery  
交货期



库存品

隔日上海・广州发货 **☑P.41**  
(17:00前订购的库存品可当日发货。)

数量≥501时，请另询交货期。



Price  
价格

询价联系方式：  
**WOS: https://www.misumi-ec.com/cn/ ☑P.57**  
TEL: 021-6710-8701 / FAX: 021-6710-8984 **☑P.1663**

■WH：Fmax.(容许压缩量)=L×30%

| d    | 压紧长度 | F max. | 负载 N(kgf) max. | Catalog No.<br>TypeD—L |
|------|------|--------|----------------|------------------------|
| 0.45 | 2.7  | 1.5    | 4.9( 0.5)      | <b>WH 4- 5*</b>        |
| 0.45 | 2.7  | 3      | 8.8( 0.9)      |                        |
| 0.55 | 5.8  | 4.5    | 13.7( 1.4)     |                        |
| 0.6  | 8.4  | 6      | 17.7( 1.8)     |                        |
| 0.65 | 12.4 | 7.5    | 22.6( 2.3)     |                        |
| 0.65 | 12.4 | 9      | 26.5( 2.7)     | <b>WH 5- 5*</b>        |
| 0.6  | 3.3  | 1.5    | 8.8( 0.9)      |                        |
| 0.7  | 5.5  | 3      | 17.7( 1.8)     |                        |
| 0.75 | 7.5  | 4.5    | 26.5( 2.7)     |                        |
| 0.75 | 7.5  | 6      | 35.3( 3.6)     |                        |
| 0.85 | 13.6 | 7.5    | 44.1( 4.5)     | <b>(30)</b>            |
| 0.9  | 17.1 | 8.8    | 51.6( 5.3)     |                        |
| 0.9  | 17.1 | 8.8    | 51.9( 5.3)     |                        |
| 0.65 | 3.3  | 1.5    | 8.8( 0.9)      | <b>WH 6- 5*</b>        |
| 0.75 | 5.2  | 3      | 17.7( 1.8)     |                        |
| 0.8  | 6.4  | 4.5    | 26.5( 2.7)     |                        |
| 0.9  | 9.9  | 6      | 35.3( 3.6)     |                        |
| 0.9  | 9.9  | 7.5    | 44.1( 4.5)     |                        |
| 1.0  | 16   | 9      | 53.0( 5.4)     | <b>30</b>              |
| 1.0  | 16   | 10.5   | 61.8( 6.3)     |                        |
| 1.1  | 25   | 12     | 70.6( 7.2)     |                        |
| 1.1  | 25   | 11.3   | 66.7( 6.8)     |                        |
| 1.2  | 39.6 | 10     | 58.8( 6.0)     |                        |
| 1.2  | 39.6 | 14.5   | 85.3( 8.7)     | <b>(55)</b>            |
| 1.2  | 39.6 | 14     | 82.4( 8.4)     |                        |
| 1.2  | 39.6 | 14     | 82.4( 8.4)     |                        |
| 1.2  | 39.6 | 15     | 88.3( 9.0)     |                        |
| 0.9  | 5.4  | 3      | 17.7( 1.8)     | <b>WH 8-10</b>         |
| 1.0  | 8    | 4.5    | 26.5( 2.7)     |                        |
| 1.1  | 11.5 | 6      | 35.3( 3.6)     |                        |
| 1.1  | 11.5 | 7.5    | 44.1( 4.5)     |                        |
| 1.2  | 16.8 | 9      | 53.0( 5.4)     |                        |
| 1.2  | 16.8 | 10.5   | 61.8( 6.3)     | <b>35</b>              |
| 1.2  | 16.8 | 12     | 70.6( 7.2)     |                        |
| 1.3  | 24.7 | 13.5   | 79.4( 8.1)     |                        |
| 1.3  | 24.7 | 15     | 88.3( 9.0)     |                        |
| 1.4  | 35   | 16.5   | 97.1( 9.9)     | <b>55</b>              |
| 1.4  | 35   | 18     | 105.9(10.8)    |                        |
| 1.4  | 35   | 17     | 100.0(10.2)    |                        |
| 1.4  | 35   | 19     | 111.8(11.4)    |                        |
| 1.0  | 5.4  | 3      | 17.7( 1.8)     | <b>WH 10-10</b>        |
| 1.1  | 7    | 4.5    | 26.5( 2.7)     |                        |
| 1.2  | 9.6  | 6      | 35.3( 3.6)     |                        |
| 1.2  | 9.6  | 7.5    | 44.1( 4.5)     |                        |
| 1.3  | 13.9 | 9      | 53.0( 5.4)     |                        |
| 1.4  | 18   | 10.5   | 61.8( 6.3)     | <b>35</b>              |
| 1.4  | 18   | 12     | 70.6( 7.2)     |                        |
| 1.5  | 25   | 13.5   | 79.4( 8.1)     |                        |
| 1.5  | 25   | 15     | 88.3( 9.0)     |                        |
| 1.5  | 25   | 16.5   | 97.1( 9.9)     | <b>55</b>              |
| 1.5  | 25   | 18     | 105.9(10.8)    |                        |
| 1.6  | 35   | 19.5   | 114.7(11.7)    |                        |
| 1.6  | 35   | 21     | 123.6(12.6)    |                        |
| 1.7  | 45.9 | 24     | 141.0(14.4)    |                        |

●负载的计算方法：负载=弹簧常数×压缩量  
(国际单位) N=N/mm×Fmm  
kgf=kgf/mm×Fmm  
(kgf=N×0.101972)

☑压紧长度为参考值。  
并且会因生产批次不同而有一些偏差。

☑使用次数：100万次

☑产品概要**☑P.1397**

☑螺旋弹簧的使用方法与注意事项**☑P.1446**

☑(L)尺寸的容许压缩量

WH5-30 Fmax.=L×25%

WH5-35 Fmax.=L×25%

WH5-40 Fmax.=L×22%

WH6-45 Fmax.=L×25%

WH6-50 Fmax.=L×20%

WH6-55 Fmax.=L×26%

WH6-60 Fmax.=L×23%

WH6-65 Fmax.=L×21%

WH6-70 Fmax.=L×21%

WH8-65 Fmax.=L×26%

WH 8- 70 Fmax.=L×27%

WH18- 90 Fmax.=L×29%

WH18-100 Fmax.=L×24%

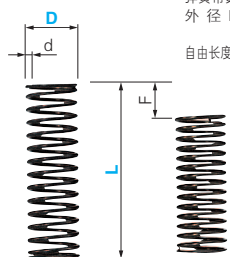
WH22- 90 Fmax.=L×29%

WH22-100 Fmax.=L×26%

☑WH型的\*符号表示两端面未进行研磨。

| d   | 压紧长度 | F max. | 负载 N(kgf) max. | Catalog No.<br>TypeD—L |
|-----|------|--------|----------------|------------------------|
| 2.1 | 12.6 | 6      | 88.3( 9.0)     | <b>WH 18-20</b>        |
| 2.2 | 15.4 | 7.5    | 109.8(11.2)    |                        |
| 2.2 | 15.4 | 9      | 132.4(13.5)    |                        |
| 2.3 | 18.4 | 10.5   | 154.0(15.7)    |                        |
| 2.4 | 21.6 | 12     | 176.5(18.0)    |                        |
| 2.5 | 25   | 13.5   | 199.1(20.3)    | <b>45</b>              |
| 2.5 | 25   | 15     | 220.6(22.5)    |                        |
| 2.6 | 30   | 16.5   | 242.2(24.7)    |                        |
| 2.6 | 30   | 18     | 264.8(27.0)    |                        |
| 2.8 | 42   | 19.5   | 286.4(29.2)    |                        |
| 2.8 | 42   | 21     | 308.9(31.5)    | <b>70</b>              |
| 2.9 | 49.3 | 24     | 353.0(36.0)    |                        |
| 3.0 | 57   | 26.1   | 397.2(40.5)    |                        |
| 3.0 | 57   | 24     | 441.3(45.0)    |                        |
| 2.2 | 12.7 | 6      | 88.3( 9.0)     | <b>WH 20-20</b>        |
| 2.3 | 15   | 7.5    | 109.8(11.2)    |                        |
| 2.3 | 15   | 9      | 132.4(13.5)    |                        |
| 2.5 | 20   | 10.5   | 154.0(15.7)    |                        |
| 2.5 | 20   | 12     | 176.5(18.0)    |                        |
| 2.5 | 20   | 13.5   | 199.1(20.3)    | <b>45</b>              |
| 2.6 | 22.8 | 15     | 220.6(22.5)    |                        |
| 2.6 | 22.8 | 16.5   | 242.2(24.7)    |                        |
| 2.8 | 30.8 | 18     | 264.8(27.0)    |                        |
| 2.8 | 30.8 | 19.5   | 286.4(29.2)    |                        |
| 3.0 | 42   | 21     | 308.9(31.5)    | <b>70</b>              |
| 3.0 | 42   | 24     | 353.0(36.0)    |                        |
| 3.2 | 56.8 | 27     | 397.2(40.5)    |                        |
| 3.2 | 56.8 | 30     | 441.3(45.0)    |                        |
| 2.3 | 12.7 | 6      | 88.3( 9.0)     | <b>WH 22-20</b>        |
| 2.5 | 16.7 | 7.5    | 109.8(11.2)    |                        |
| 2.5 | 16.7 | 9      | 132.4(13.5)    |                        |
| 2.6 | 18.2 | 10.5   | 154.0(15.7)    |                        |
| 2.8 | 25   | 12     | 176.5(18.0)    |                        |
| 2.8 | 25   | 13.5   | 199.1(20.3)    | <b>45</b>              |
| 2.8 | 25   | 15     | 220.6(22.5)    |                        |
| 3.0 | 33   | 16.5   | 242.2(24.7)    |                        |
| 3.0 | 33   | 18     | 264.8(27.0)    |                        |
| 3.0 | 33   | 19.5   | 286.4(29.2)    |                        |
| 3.2 | 43   | 21     | 308.9(31.5)    | <b>70</b>              |
| 3.2 | 43   | 24     | 353.0(36.0)    |                        |
| 3.2 | 43   | 26.1   | 397.2(40.5)    |                        |
| 3.5 | 64.4 | 26     | 441.3(45.0)    |                        |
| 2.8 | 16.8 | 9      | 132.4(13.5)    | <b>WH 27-30</b>        |
| 2.8 | 16.8 | 10.5   | 154.0(15.7)    |                        |
| 2.9 | 18.8 | 12     | 176.5(18.0)    |                        |
| 2.9 | 19.4 | 13.5   | 199.1(20.3)    |                        |
| 3.2 | 25.5 | 15     | 220.6(22.5)    |                        |
| 3.2 | 25.5 | 16.5   | 242.2(24.7)    | <b>55</b>              |
| 3.5 | 35.5 | 18     | 264.8(27.0)    |                        |
| 3.5 | 35.5 | 19.5   | 286.4(29.2)    |                        |
| 3.5 | 35.5 | 21     | 308.9(31.5)    |                        |
| 3.5 | 35.5 | 24     | 353.0(36.0)    |                        |
| 3.5 | 35.5 | 27     | 397.2(40.5)    | <b>90</b>              |
| 4.0 | 68   | 30     | 441.3(45.0)    |                        |

WH  
WB



弹簧常数 ±10%  
外径 D φ10以下-0.5mm  
φ12以上-0.5mm  
WH50以下±1.5mm  
WB55以上±2mm  
WB50以下±1mm  
WB55以上±1.5mm

RoHS

M材质 相当于SWP

■弹簧常数

| D     | Type                              | WY                                | WR                                | WF                               | WL                               | WT                               | WM                               | WH                                | WB                                |
|-------|-----------------------------------|-----------------------------------|-----------------------------------|----------------------------------|----------------------------------|----------------------------------|----------------------------------|-----------------------------------|-----------------------------------|
| 2     | N/mm<br>0.1<br>(kgf/mm)<br>{0.01} | N/mm<br>0.3<br>{kgf/mm}<br>{0.03} | N/mm<br>0.5<br>{kgf/mm}<br>{0.05} | N/mm<br>1.0<br>{kgf/mm}<br>{0.1} | 0.5{0.05}                        | 1.5<br>{0.15}                    | 2.0<br>{0.2}                     | 2.9{0.3}                          | 3.9{0.4}<br>4.9{0.5}              |
| 3     |                                   |                                   |                                   |                                  |                                  |                                  |                                  |                                   |                                   |
| 4     |                                   |                                   |                                   |                                  |                                  |                                  |                                  |                                   |                                   |
| 5     |                                   |                                   |                                   |                                  |                                  |                                  |                                  |                                   |                                   |
| 6     |                                   |                                   |                                   |                                  |                                  |                                  |                                  |                                   |                                   |
| 8     |                                   |                                   |                                   |                                  |                                  |                                  |                                  |                                   |                                   |
| 10    |                                   |                                   |                                   |                                  |                                  |                                  |                                  |                                   |                                   |
| 12    |                                   |                                   |                                   |                                  |                                  |                                  |                                  |                                   |                                   |
| 13    |                                   |                                   |                                   |                                  |                                  |                                  |                                  |                                   |                                   |
| 14    |                                   |                                   |                                   |                                  |                                  |                                  |                                  |                                   |                                   |
| 16    | N/mm<br>0.2<br>(kgf/mm)<br>{0.02} | N/mm<br>0.5<br>{kgf/mm}<br>{0.05} | N/mm<br>1.0<br>{kgf/mm}<br>{0.1}  | N/mm<br>2.0<br>{kgf/mm}<br>{0.2} | N/mm<br>2.9<br>{kgf/mm}<br>{0.3} | N/mm<br>4.9<br>{kgf/mm}<br>{0.5} | N/mm<br>9.8<br>{kgf/mm}<br>{1.0} | N/mm<br>19.6<br>{kgf/mm}<br>{2.0} | N/mm<br>39.2<br>{kgf/mm}<br>{4.0} |
| 18    |                                   |                                   |                                   |                                  |                                  |                                  |                                  |                                   |                                   |
| 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%                           |                                   |

■WB：Fmax.(容许压缩量)=L×25%

| d    | 压紧长度 | F max. | 负载 N(kgf) max. | Catalog No. |         |    |
|------|------|--------|----------------|-------------|---------|----|
|      |      |        |                | Type        | D—L     |    |
| 0.4  | 3.2  | 1.3    | 4.9( 0.5)      | WB 3—5*     | —       |    |
| 0.5  | 6.5  | 2.5    | 9.8( 1.0)      |             | 10*     |    |
| 0.55 | 10.5 | 3.8    | 14.7( 1.5)     |             | 15*     |    |
| 0.55 | 12.7 | 5      | 19.6( 2.0)     |             | 20*     |    |
| 0.6  | 17.4 | 6.3    | 24.5( 2.5)     |             | 25*     |    |
| 0.6  | 21.0 | 7.5    | 29.4( 3.0)     |             | 30*     |    |
| 0.65 | 24.0 | 8.8    | 34.3( 3.5)     |             | 35*     |    |
| 0.65 | 27.0 | 10.0   | 39.2( 4.0)     |             | 40*     |    |
| 0.5  | 3    | 1.3    | 5.9( 0.6)      |             | WB 4—5* | —  |
| 0.6  | 6    | 2.5    | 12.3( 1.3)     |             |         | 10 |
| 0.65 | 9.8  | 3.8    | 18.1( 1.9)     | 15          |         |    |
| 0.7  | 12.6 | 5      | 24.5( 2.5)     | 20          |         |    |
| 0.75 | 16.5 | 6.3    | 30.4( 3.1)     | 25          |         |    |
| 0.75 | 20.3 | 7.5    | 36.8( 3.8)     | 30          |         |    |
| 0.8  | 24   | 8.8    | 43.1( 4.4)     | 35          |         |    |
| 0.8  | 28   | 10     | 49.0( 5.0)     | 40          |         |    |
| 0.8  | 29   | 11.3   | 55.4( 5.7)     | 45          |         |    |
| 0.85 | 34   | 12.5   | 61.3( 6.3)     | 50          |         |    |
| 0.65 | 3.3  | 1.3    | 12.7( 1.3)     | WB 5—5*     | —       |    |
| 0.8  | 7    | 2.5    | 24.5( 2.5)     |             | 10      |    |
| 0.8  | 7    | 3.8    | 37.3( 3.8)     |             | 15      |    |
| 0.9  | 13   | 5      | 49.0( 5.0)     |             | 20      |    |
| 0.9  | 13   | 6.3    | 61.8( 6.3)     |             | 25      |    |
| 1.0  | 21   | 7.5    | 73.5( 7.5)     |             | 30      |    |
| 1.0  | 25   | 8.8    | 86.3( 8.8)     |             | 35      |    |
| 1.0  | 25   | 10     | 98.1(10.0)     |             | 40      |    |
| 1.1  | 31   | 11.3   | 110.8(11.3)    |             | 45      |    |
| 1.1  | 34   | 12.5   | 122.6(12.5)    |             | 50      |    |
| 1.1  | 39   | 13.8   | 135.3(13.8)    | 55          |         |    |
| 1.1  | 43   | 15     | 147.1(15.0)    | 60          |         |    |
| 1.2  | 46   | 16.3   | 159.8(16.3)    | 65          |         |    |
| 1.2  | 50   | 17.5   | 171.6(17.5)    | 70          |         |    |
| 0.7  | 3.5  | 1.3    | 12.7( 1.3)     | WB 6—5*     | —       |    |
| 0.8  | 7    | 2.5    | 24.5( 2.5)     |             | 10      |    |
| 0.9  | 7.5  | 3.8    | 37.3( 3.8)     |             | 15      |    |
| 1.0  | 11.5 | 5      | 49.0( 5.0)     |             | 20      |    |
| 1.1  | 17.5 | 6.3    | 61.8( 6.3)     |             | 25      |    |
| 1.1  | 19.5 | 7.5    | 73.5( 7.5)     |             | 30      |    |
| 1.1  | 20   | 8.8    | 86.3( 8.8)     |             | 35      |    |
| 1.2  | 28   | 10     | 98.1(10.0)     |             | 40      |    |
| 1.2  | 30   | 11.3   | 110.8(11.3)    |             | 45      |    |
| 1.2  | 32   | 12.5   | 122.6(12.5)    |             | 50      |    |
| 1.2  | 32   | 13.8   | 135.3(13.8)    | 55          |         |    |
| 1.3  | 43   | 15     | 147.1(15.0)    | 60          |         |    |
| 1.3  | 46   | 16.3   | 159.8(16.3)    | 65          |         |    |
| 1.3  | 50   | 17.5   | 171.6(17.5)    | 70          |         |    |
| 1.4  | 57   | 20     | 196.1(20.0)    | 80          |         |    |
| 1.0  | 6    | 2.5    | 24.5( 2.5)     | WB 8—10     | —       |    |
| 1.2  | 10.8 | 3.8    | 37.3( 3.8)     |             | 15      |    |
| 1.2  | 11.5 | 5      | 49.0( 5.0)     |             | 20      |    |
| 1.3  | 17   | 6.3    | 61.8( 6.3)     |             | 25      |    |
| 1.3  | 17   | 7.5    | 73.5( 7.5)     |             | 30      |    |
| 1.4  | 24.5 | 8.8    | 86.3( 8.8)     |             | 35      |    |
| 1.4  | 25.2 | 10     | 98.1(10.0)     |             | 40      |    |
| 1.5  | 32   | 11.3   | 110.8(11.3)    |             | 45      |    |
| 1.5  | 33   | 12.5   | 122.6(12.5)    |             | 50      |    |
| 1.5  | 36.5 | 13.8   | 135.3(13.8)    |             | 55      |    |
| 1.5  | 36.5 | 15     | 147.1(15.0)    | 60          |         |    |
| 1.6  | 48   | 16.3   | 159.8(16.3)    | 65          |         |    |
| 1.6  | 48   | 17.5   | 171.6(17.5)    | 70          |         |    |
| 1.6  | 55   | 20     | 196.1(20.0)    | 80          |         |    |