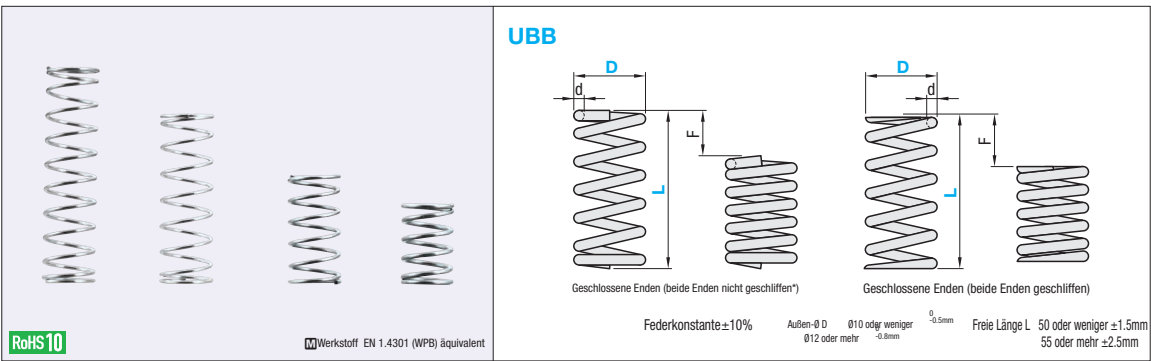


Runde Schraubenfedern

Außen-Ø referenziert, rostfreier Stahl

Runde Schraubenfedern

L-Maß konfigurierbar / Außen-Ø referenziert, rostfreier Stahl



■UBB: Fmax. (Zulässige Auslenkung)=LxFa%

Teilenummer Ausführung D-L	d	Feste Länge	F max.	N{kgf} max.	Fa%	Stückpreis	Teilenummer Ausführung D-L	d	Feste Länge	F max.	N{kgf} max.	Fa%	Stückpreis
UBB4-5	0.55	3.3	1.25	6.1 {0.63}			UBB13-15	1.8	9.5	3.75	73.5 {7.5}		
10	0.65	7.0	2.5	12.3 {1.3}	25		20	1.9	12.9	5	98.1 {10.0}		
15	0.7	10.3	3.75	18.4 {1.9}			25	2	17.0	6.25	123 {12.5}		
20	0.75	14.4	5	24.5 {2.5}			30	2.1	20.5	7.5	147 {15.0}	25	
25	0.8	19.4	5	24.5 {2.5}	20		40	2.3	28.2	10	196 {20.0}		
UBB5-5	0.6	2.9	1.25	6.1 {0.63}			45	2.3	32.2	11.25	221 {22.5}		
10	0.75	6.9	2.5	12.3 {1.3}			50	2.4	36.0	12.5	245 {25.0}	20	
15	0.8	9.8	3.75	18.4 {1.9}			60	2.5	44.4	12	235 {24.0}		
20	0.85	13.4	5	24.5 {2.5}			70	2.6	54.0	14	275 {28.0}		
25	0.9	17.8	6.25	30.6 {3.1}			UBB14-15	1.9	10.0	3.75	73.5 {7.5}		
30	0.9	21.8	7.5	36.8 {3.8}			20	2	13.5	5	98.1 {10.0}		
UBB6-5	0.8	3.6	1.25	12.3 {1.3}			25	2.1	16.3	6.25	123 {12.5}		
10	0.9	6.8	2.5	24.5 {2.5}			30	2.3	21.3	7.5	147 {15.0}	25	
15	1	10.5	3.75	36.8 {3.8}			35	2.3	24.7	8.75	172 {17.5}		
20	1.1	14.6	5	49.0 {5.0}			40	2.4	28.2	10	196 {20.0}		
25	1.1	17.9	6.25	61.3 {6.3}			45	2.6	43.6	15	294 {30.0}		
30	1.2	23.1	6	58.8 {6.0}			60	2.6	43.6	15	294 {30.0}	20	
35	1.2	27.3	7	68.6 {7.0}			80	2.7	61.4	16	314 {32.0}		
40	1.2	31.2	8	78.5 {8.0}	20								
45	1.3	34.8	9	88.3 {9.0}									
50	1.3	38.4	10	98.1 {10.0}									
60	1.3	44.2	9	88.3 {9.0}	15								
70	1.4	58.5	10.5	103 {10.5}									
UBB8-10	1.1	6.9	2.5	24.5 {2.5}									
15	1.2	9.9	3.75	36.8 {3.8}									
20	1.3	14.0	5	49.0 {5.0}									
25	1.3	14.5	6.25	61.3 {6.3}									
30	1.4	21.4	7.5	73.5 {7.5}									
35	1.4	22.0	8.75	85.8 {8.8}									
40	1.5	28.9	10	98.1 {10.0}									
45	1.5	32.6	11.25	110 {11.3}									
UBB10-10	1.3	7.2	2.5	24.5 {2.5}									
15	1.4	10.2	3.75	36.8 {3.8}									
20	1.5	13.9	5	49.0 {5.0}									
25	1.5	16.1	6.25	61.3 {6.3}									
30	1.6	20.4	7.5	73.5 {7.5}									
35	1.6	22.8	8.75	85.8 {8.8}									
40	1.7	27.2	10	98.1 {10.0}									
45	1.7	30.6	11.25	110 {11.3}									
50	1.8	36.5	12.5	123 {12.5}									
60	1.8	41.4	15	147 {15.0}									
70	1.9	50.8	17.5	172 {17.5}									
UBB12-15	1.5	9.4	3.75	36.8 {3.8}									
20	1.6	12.4	5	49.0 {5.0}									
25	1.7	16.2	6.25	61.3 {6.3}									
30	1.8	20.3	7.5	73.5 {7.5}									
40	1.9	28.0	10	98.1 {10.0}									
50	2	35.5	12.5	123 {12.5}									
60	2.1	43.6	15	147 {15.0}									
70	2.1	48.8	17.5	172 {17.5}									
80	2.2	58.5	20	196 {20.0}									

Teilenummer	UV	UY	UR	UF	UL	UTT	UM	UH	UBB
2		0.05{0.005}	0.2{0.02}	0.3{0.03}	0.5{0.05}				
3									
4	N/mm 0.05 {0.005}	N/mm 0.098 {0.01}				N/mm 1.5 {0.15}	2.0{0.2}	2.9{0.3}	4.9{0.5}
5									
6									
8			N/mm 0.29 {0.03}	N/mm 0.49 {0.05}	N/mm 0.98 {0.1}			N/mm 5.9 {0.6}	N/mm 9.8 {1.0}
10						N/mm 2.0 {0.2}	N/mm 2.9 {0.3}	N/mm 9.8 {1.0}	N/mm 19.6 {2.0}
12		N/mm 0.2 {0.02}							
13									
14									
16									
20		0.3{0.03}	0.5{0.05}	0.98{0.1}	2.9{0.3}	3.9{0.4}	4.9{0.5}	14.7{1.5}	29.4{3.0}
Fmax.	F=Lx70%	F=L x Fa%	F=L x Fa%	F=L x 45%	F=Lx40%	F=L x Fa%	F=L x Fa%	F=L x Fa%	F=L x Fa%



Ordering
Example

Teilenummer
UBB16-80

■Druckfedern

Ausführung	Zulässige Auslenkung	Werkstoff
FWR	F=Lx60%	JIS-SWP-A
FWF	F=Lx50%	
FWT	F=Lx40%	
FUR	F=Lx60%	EN 1.4301 (WPB) äquivalent
FUF	F=Lx50%	
FUT	F=Lx40%	

D

d

L

D

d

L

D

d

L

D

d

L

D

d

L

D

d

L

<Berechnung der Federkonstante>

Max. Last (N{kgf})

Federkonstante = $\frac{\text{Max. Last (N{kgf})}}{L \times \text{zulässige Auslenkung (\%)}}$

D-Toleranz

Ø5~14

±0.3

D-Toleranz

Ø5~27

±0.4

L-Toleranz

~ 50

±1

L-Toleranz

51~100

±2

L-Toleranz

101~250

±4

⚡ Zulässige Auslenkung in % nicht überschreiten.

⚡ Kein Abschleifen der Enden bei d unter 0.9.

⚡ P ist nur Referenzwert.

⚡ Die Lasttypen A und B haben eine unterschiedliche Anzahl von Spulen, daher ist das P-Maß unterschiedlich.

RoHS10

RoHS10

Teilenummer		1mm-Schritte L	Auswahl Lastaus- führung	Max. Last N (kgf)						d			P (Referenz)		
Ausführung	D			JIS-SWP-A			EN 1.4301 (WPB) äquivalent			FWR FUR	FWF FUF	FWT FUT	FWR FUR	FWF FUF	FWT FUT
				FWR60%	FWF50%	FWT40%	FUR60%	FUF50%	FUT40%						
FWR FWF FWT (JIS-SWP-A)	5	15~65	A	2.8(0.29)	5.2(0.53)	8.1(0.83)	2.5(0.25)	4.5(0.46)	7.1(0.73)	0.4	0.5	0.6	1.8	1.5	1.3
			B	3.7(0.38)	6.7(0.69)	10.6(1.08)	3.3(0.33)	5.9(0.60)	9.3(0.95)				2.3	1.9	1.7
	6	15~80	A	2.9(0.30)	7.3(0.75)	9.9(1.01)	2.5(0.26)	6.4(0.65)	8.7(0.89)	0.45	0.6	0.7	2.0	1.7	1.5
			B	3.8(0.38)	9.6(0.97)	12.9(1.32)	3.3(0.34)	8.4(0.85)	11.3(1.15)				2.6	2.3	1.9
	7	15~90	A	3.1(0.32)	10.1(1.03)	11.5(1.17)	2.7(0.28)	8.8(0.90)	10.0(1.02)	0.5	0.7	0.8	2.2	2.0	1.7
			B	4.0(0.41)	13.1(1.34)	14.9(1.52)	3.5(0.36)	11.5(1.17)	13.0(1.33)				2.9	2.7	2.2
	8	20~100	A	5.2(0.53)	12.2(1.24)	13.8(1.41)	4.6(0.47)	10.7(1.09)	12.1(1.23)	0.6	0.8	0.9	2.7	2.2	1.9
			B	6.8(0.70)	15.9(1.62)	17.9(1.83)	6.0(0.61)	13.9(1.42)	15.7(1.60)				3.5	2.9	2.4
	9	19~110	A	8.1(0.83)	17.4(1.78)	22.1(2.25)	7.1(0.72)	15.2(1.56)	19.3(1.97)	0.7	0.9	1.0	2.9	2.5	2.6
			B	10.0(1.02)	20.6(2.09)	27.5(2.80)	8.7(0.89)	17.9(1.83)	24.0(2.45)				3.5	2.9	3.3
	10	20~120	A	10.6(1.08)	19.2(1.96)	30.5(3.11)	9.3(0.95)	16.9(1.72)	26.7(2.72)	0.8	1.0	1.2	3.4	2.8	2.5
			B	13.7(1.40)	24.9(2.54)	39.5(4.03)	12.1(1.23)	21.8(2.22)	34.6(3.53)				4.4	3.6	3.2
	11	21~130	A	9.0(0.92)	17.2(1.75)	27.9(2.85)	7.9(0.80)	15.0(1.53)	24.4(2.49)	0.8	1.0	1.2	3.5	3.3	2.9
			B	12.6(1.28)	22.9(2.33)	36.3(3.70)	11.0(1.12)	20.0(2.04)	31.7(3.24)				4.9	4.3	3.8
12	25~140	A	11.0(1.12)	27.6(2.81)	37.7(3.84)	9.6(0.98)	24.1(2.46)	33.0(3.34)	0.9	1.2	1.4	3.8	3.3	2.9	
		B	14.2(1.45)	35.8(3.65)	48.9(4.99)	12.5(1.27)	31.3(3.19)	42.9(4.37)				4.9	4.3	3.8	
13	24~150	A	10.5(1.07)	26.5(2.70)	35.7(3.63)	9.1(0.93)	23.2(2.37)	31.1(3.18)	0.9	1.2	1.4	4.2	3.9	3.3	
		B	13.4(1.37)	34.6(3.52)	46.4(4.73)	11.7(1.20)	30.2(3.08)	40.5(4.13)				5.5	5.1	4.3	
14	30~160	A	11.6(1.18)	37.7(3.84)	45.9(4.68)	10.1(1.03)	33.0(3.36)	40.2(4.10)	1.0	1.4	1.6	4.2	3.9	3.3	
		B	15.1(1.54)	48.9(4.99)	59.6(6.08)	13.1(1.34)	42.8(4.36)	52.2(5.32)				5.5	5.1	4.3	
15	27~170	A	11.4(1.16)	36.8(3.75)	44.4(4.53)	9.9(1.01)	32.1(3.28)	38.8(3.96)	1.0	1.4	1.6	5.0	4.5	3.7	
		B	14.9(1.51)	47.1(4.80)	56.6(5.77)	14.9(1.53)	41.1(4.20)	49.4(5.05)				6.5	5.8	4.8	
16	30~180	A	19.4(1.98)	49.7(5.07)	55.1(5.62)	17.0(1.73)	43.4(4.43)	48.2(4.91)	1.2	1.6	1.8	5.0	4.5	3.7	
		B	25.1(2.56)	64.5(6.58)	71.2(7.26)	22.0(2.24)	56.5(5.76)	62.6(6.38)				6.5	5.8	4.8	
17	31~190	A	19.6(2.00)	47.9(4.88)	53.5(5.45)	17.1(1.75)	41.8(4.27)	46.7(4.77)	1.2	1.6	1.8	5.9	5.0	4.1	
		B	25.3(2.57)	62.0(6.32)	69.9(7.13)	22.0(2.25)	54.1(5.53)	61.0(6.24)				7.7	6.5	5.4	
18	35~200	A	29.9(3.05)	62.1(6.33)	65.2(6.65)	26.2(2.67)	54.3(5.54)	57.1(5.82)	1.4	1.8	2.0	5.9	5.0	4.1	
		B	38.9(3.97)	80.7(8.23)	84.6(8.63)	34.0(3.47)	70.6(7.2)	74.0(7.55)				7.7	6.5	5.4	
20	40~200	A	42.7(4.35)	76.9(7.84)	99.0(10.1)	37.4(3.81)	67.3(6.86)	86.6(8.83)	1.6	2.0	2.3	6.7	5.5	4.8	
		B	55.2(5.63)	100 {10.2}	128 {13.1}	48.3(4.93)	87.2(8.89)	113 {11.5}				8.7	7.2	6.3	
23	45~200	A	51.9(5.29)	103.0(10.50)	121.0(12.34)	45.4(4.63)	90.2(9.20)	106.0(10.81)	1.8	2.3	2.6	7.8	6.4	5.5	
		B	67.4(6.87)	133.0(13.56)	156.0(15.91)	58.9(6.01)	113.0(11.52)	137.0(13.97)				10.1	8.1	7.1	
25	50~250	A	64.5(6.58)	153.5(15.64)	178.6(18.20)	56.3(5.75)	133.9(13.68)	155.9(15.93)	2.0	2.6	2.9	7.8	7.1	6.3	
		B	82.4(8.39)	172.0(17.53)	214.3(21.84)	71.9(7.34)	150.1(15.34)	187.0(19.11)				10.2	8.0	7.9	
27	70~250	A	86.0(8.77)	195.0(19.87)	220.3(22.45)	75.0(7.67)	170.2(17.39)	192.3(19.64)	2.3	2.9	3.2	7.5	7.4	6.7	
		B	110.9(11.30)	214.2(21.83)	274.0(27.92)	96.8(9.89)	187.0(19.10)	239.1(24.43)				9.6	8.1	8.6	

Last (kgf) = Last N x0.101972

Teilenummer		Stückpreis				
Ausführung	D	L15~40	L41~80	L81~120	L121~160	L161~200
FWR FWF FWT (JIS-SWP-A)	5			-	-	-
	6			-	-	-
	7				-	-
	8				-	-
	9				-	-
	10				-	-
	11					-
	12					-
	13					-
	14					-
	15					
	16					
	17					
	18					
	20					
	23	-				
	25	-				
27	-					



Ordering
Example

Teilenummer - L - Art der Last
FWF10 - 119 - A

Teil
