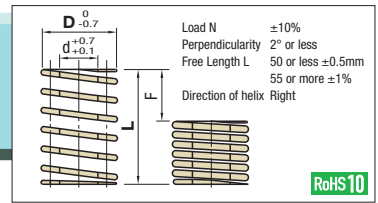


Coil Spring

Ultra Heavy Load SWB



D	d	L	Spring Constant N/mm(kgf/mm)	F=Lx16%			F=Lx18%			F=Lx20%			Part Number	Unit Price
				Fmm	Load N(kgf)	Fmm	Load N(kgf)	Fmm	Load N(kgf)	Fmm	Load N(kgf)	Fmm		
6	3	15	59.0(6.0)	2.4	2.7	3.0	142 {14}	159 {16}	177 {18}	SWB 6-	15		SWB 6-	15
		20	44.3(4.5)	3.2	3.6	4.0					20			
		25	35.4(3.6)	4.0	4.5	5.0					25			
		30	29.5(3.0)	4.8	5.4	6.0					30			
		35	25.3(2.6)	5.6	6.3	7.0					35			
		40	22.1(2.3)	6.4	7.2	8.0					40			
		45	19.7(2.0)	7.2	8.1	9.0					45			
		50	17.7(1.8)	8.0	9.0	10.0					50			
		55	16.1(1.6)	8.8	9.9	11.0					55			
		60	14.8(1.5)	9.6	10.8	12.0					60			
8	4	10	162(16.5)	1.6	1.8	2.0	258 {26}	291 {30}	323 {33}	SWB 8-	10		SWB 8-	10
		15	108(11.0)	2.4	2.7	3.0					15			
		20	80.8(8.2)	3.2	3.6	4.0					20			
		25	64.6(6.6)	4.0	4.5	5.0					25			
		30	53.8(5.5)	4.8	5.4	6.0					30			
		35	46.1(4.7)	5.6	6.3	7.0					35			
		40	40.4(4.1)	6.4	7.2	8.0					40			
		45	35.9(3.7)	7.2	8.1	9.0					45			
		50	32.3(3.3)	8.0	9.0	10.0					50			
		55	29.4(3.0)	8.8	9.9	11.0					55			
		60	26.9(2.7)	9.6	10.8	12.0					60			
		65	24.8(2.5)	10.4	11.7	13.0					65			
		70	23.1(2.4)	11.2	12.6	14.0					70			
		75	21.5(2.2)	12.0	13.5	15.0					75			
80	20.2(2.1)	12.8	14.4	16.0	80									
10	5	10	221(22.5)	1.6	1.8	2.0	353 {36}	397 {41}	441 {45}	SWB 10-	10		SWB 10-	10
		15	147(15.0)	2.4	2.7	3.0					15			
		20	110(11.2)	3.2	3.6	4.0					20			
		25	88.2(9.0)	4.0	4.5	5.0					25			
		30	73.5(7.5)	4.8	5.4	6.0					30			
		35	63.0(6.4)	5.6	6.3	7.0					35			
		40	55.1(5.6)	6.4	7.2	8.0					40			
		45	49.0(5.0)	7.2	8.1	9.0					45			
		50	44.1(4.5)	8.0	9.0	10.0					50			
		55	40.1(4.1)	8.8	9.9	11.0					55			
		60	36.8(3.7)	9.6	10.8	12.0					60			
		65	33.9(3.5)	10.4	11.7	13.0					65			
		70	31.5(3.2)	11.2	12.6	14.0					70			
		75	29.4(3.0)	12.0	13.5	15.0					75			
80	27.6(2.8)	12.8	14.4	16.0	80									
90	24.5(2.5)	14.4	16.2	18.0	90									
12	6	15	190(19.3)	2.4	2.7	3.0	455 {46}	512 {52}	569 {58}	SWB 12-	15		SWB 12-	15
		20	142(14.5)	3.2	3.6	4.0					20			
		25	114(11.6)	4.0	4.5	5.0					25			
		30	94.8(9.7)	4.8	5.4	6.0					30			
		35	81.3(8.3)	5.6	6.3	7.0					35			
		40	71.1(7.3)	6.4	7.2	8.0					40			
		45	63.2(6.4)	7.2	8.1	9.0					45			
		50	56.9(5.8)	8.0	9.0	10.0					50			
		55	51.7(5.3)	8.8	9.9	11.0					55			
		60	47.4(4.8)	9.6	10.8	12.0					60			
		65	43.8(4.5)	10.4	11.7	13.0					65			
		70	40.6(4.1)	11.2	12.6	14.0					70			
		75	37.9(3.9)	12.0	13.5	15.0					75			
		80	35.6(3.6)	12.8	14.4	16.0					80			
90	31.6(3.2)	14.4	16.2	18.0	90									
14	7	20	184(18.8)	3.2	3.6	4.0	589 {60}	662 {68}	736 {75}	SWB 14-	20		SWB 14-	20
		25	147(15.0)	4.0	4.5	5.0					25			
		30	123(12.5)	4.8	5.4	6.0					30			
		35	105(10.7)	5.6	6.3	7.0					35			
		40	92.0(9.4)	6.4	7.2	8.0					40			
		45	81.8(8.3)	7.2	8.1	9.0					45			
		50	73.6(7.5)	8.0	9.0	10.0					50			
		55	66.9(6.8)	8.8	9.9	11.0					55			
		60	61.3(6.3)	9.6	10.8	12.0					60			
		65	56.6(5.8)	10.4	11.7	13.0					65			
		70	52.6(5.4)	11.2	12.6	14.0					70			
		75	49.1(5.0)	12.0	13.5	15.0					75			
		80	46.0(4.7)	12.8	14.4	16.0					80			
		90	40.9(4.2)	14.4	16.2	18.0					90			
100	36.8(3.8)	16.0	18.0	20.0	100									

Usage Count 1 Million Times 500,000 Times 300,000 Times

* Load calculation method = Spring constant x Deflection (Nt Unit) N=N/mmxFmm (kgf=kgf/mmxFmm (kgf=Nx0.101972) **Material:** Oil tempered wires for springs

- How to use coil springs, and precautions **P.328**
- About D dimension and back facing hole, and D dimension and shaft, see **P.1881**.
- Sizes larger than D25 are listed in "Press Die and Mold Components".
- See the left-hand page for ordering example.

D	d	L	Spring Constant N/mm(kgf/mm)	F=Lx16%			F=Lx18%			F=Lx20%			Part Number	Unit Price
				Fmm	Load N(kgf)	Fmm	Load N(kgf)	Fmm	Load N(kgf)	Fmm	Load N(kgf)	Fmm		
16	8	20	245(25.0)	3.2	3.6	4.0	784 {80}	882 {90}	980 {100}	SWB 16-	20		SWB 16-	20
		25	196(20.0)	4.0	4.5	5.0					25			
		30	163(16.7)	4.8	5.4	6.0					30			
		35	140(14.3)	5.6	6.3	7.0					35			
		40	123(12.5)	6.4	7.2	8.0					40			
		45	109(11.1)	7.2	8.1	9.0					45			
		50	98.0(10.0)	8.0	9.0	10.0					50			
		55	89.1(9.1)	8.8	9.9	11.0					55			
		60	81.7(8.3)	9.6	10.8	12.0					60			
		65	75.4(7.7)	10.4	11.7	13.0					65			
		70	70.0(7.1)	11.2	12.6	14.0					70			
		75	65.3(6.7)	12.0	13.5	15.0					75			
		80	61.3(6.3)	12.8	14.4	16.0					80			
		90	54.4(5.6)	14.4	16.2	18.0					90			
100	49.0(5.0)	16.0	18.0	20.0	100									
18	9	20	306(31.2)	3.2	3.6	4.0	980 {100}	1103 {113}	1225 {125}	SWB 18-	20		SWB 18-	20
		25	245(25.0)	4.0	4.5	5.0					25			
		30	204(20.8)	4.8	5.4	6.0					30			
		35	175(17.8)	5.6	6.3	7.0					35			
		40	153(15.6)	6.4	7.2	8.0					40			
		45	136(13.9)	7.2	8.1	9.0					45			
		50	123(12.5)	8.0	9.0	10.0					50			
		55	111(11.4)	8.8	9.9	11.0					55			
		60	102(10.4)	9.6	10.8	12.0					60			
		65	94.2(9.6)	10.4	11.7	13.0					65			
		70	87.5(8.9)	11.2	12.6	14.0					70			
		75	81.7(8.3)	12.0	13.5	15.0					75			
		80	76.6(7.8)	12.8	14.4	16.0					80			
		90	68.1(6.9)	14.4	16.2	18.0					90			
100	61.3(6.2)	16.0	18.0	20.0	100									
20	10	20	392(40.0)	3.2	3.6	4.0	1254 {128}	1411 {144}	1568 {160}	SWB 20-	20		SWB 20-	20
		25	314(32.0)	4.0	4.5	5.0					25			
		30	261(26.6)	4.8	5.4	6.0					30			
		35	224(22.8)	5.6	6.3	7.0					35			
		40	196(20.0)	6.4	7.2	8.0					40			
		45	174(17.8)	7.2	8.1	9.0					45			
		50	157(16.0)	8.0	9.0	10.0					50			
		55	143(14.5)	8.8	9.9	11.0					55			
		60	131(13.3)	9.6	10.8	12.0					60			
		65	121(12.3)	10.4	11.7	13.0					65			
		70	112(11.4)	11.2	12.6	14.0					70			
		75	105(10.7)	12.0	13.5	15.0					75			
		80	98.0(10.0)	12.8	14.4	16.0					80			
		90	87.1(8.9)	14.4	16.2	18.0					90			
100	78.4(8.0)	16.0	18.0	20.0	100									
125	62.7(6.4)	20.0	22.5	25.0	125									
150	52.3(5.3)	24.0	27.0	30.0	150									
22	11	25	382(39.0)	4.0	4.5	5.0	1530 {156}	1721 {175}	1912 {195}	SWB 22-	25		SWB 22-	25
		30	319(32.5)	4.8	5.4	6.0					30			
		35	273(27.9)	5.6	6.3	7.0					35			
		40	239(24.4)	6.4	7.2	8.0					40			
		45	212(21.7)	7.2	8.1	9.0					45			
		50	191(19.5)	8.0	9.0	10.0					50			
		55	174(17.7)	8.8	9.9	11.0					55			
		60	159(16.2)	9.6	10.8	12.0					60			
		65	147(15.0)	10.4	11.7	13.0					65			
		70	137(13.9)	11.2	12.6	14.0					70			
		75	127(13.0)	12.0	13.5	15.0					75			
		80	120(12.2)	12.8	14.4	16.0					80			
		90	106(10.8)	14.4	16.2	18.0					90			
		100	95.6(9.8)	16.0	18.0	20.0					100			
125	76.5(7.8)	20.0	22.5	25.0	125									
150	63.7(6.5)	24.0	27.0	30.0	150									
25	12.5	25	481(49.0)	4.0	4.5	5.0	1922 {196}	2162 {229}	2403 {245}	SWB 25-	25		SWB 25-	25
		30	400(40.8)	4.8	5.4	6.0					30			
		35	343(35.0)	5.6	6.3	7.0					35			
		40	300(30.6)	6.4	7.2	8.0					40			
		45	267(27.2)	7.2	8.1	9.0					45			
		50	240(24.5)	8.0	9.0	10.0					50			
		55	218(22.3)	8.8	9.9	11.0					55			
		60	200(20.4)	9.6	10.8	12.0					60			
		65	185(18.8)	10.4	11.7	13.0					65			
		70	172(17.5)	11.2	12.6	14.0					70			
		75	160(16.3)	12.0	13.5	15.0					75			
		80	150(15.3)	12.8	14.4	16.0					80			
		90	133(13.6)	14.4	16.2	18.0					90			
		100	120(12.2)	16.0	18.0	20.0					100			
125	96.1(9.8)	20.0	22.5	25.0	125									
150	80.1(8.2)	24.0	27.0	30.0	150									
175	68.6(7.0)	28.0	31.5	35.0	175									

Usage Count 1 Million Times 500,000 Times 300,000 Times