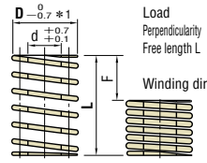
COIL SPRINGS
—SWB—

Light ← Load → Heavy

SWB



Load ±10% RoHS
Perpendicularity 2° or less
Free length L 50 or less ±0.5mm
55 or more ±1%
Winding direction: right

∗1 For D70, the D dimension tolerance is 0 −1.0

D	d	L	Spring constant N/mm {kgf/mm}	F=L×16% Fmm	Load N {kgf}	F=L×18% Fmm	Load N {kgf}	F=L×20% Fmm	Load N {kgf}	Catalog No. Type D—L	Base unit price 1～19 pieces
Operation count				1,000,000		500,000		300,000			
6	3	15	59.0 {6.0}	2.4	142 {14}	2.7	159 {16}	3.0	177 {18}	SWB6—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	258 {26}	1.8	291 {30}	2.0	323 {33}	SWB8—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	353 {36}	1.8	397 {41}	2.0	441 {45}	SWB10—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	455 {46}	2.7	512 {52}	3.0	569 {58}	SWB12—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	589 {60}	3.6	662 {68}	4.0	736 {75}	SWB14—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	

Quotation

D	d	L	Spring constant N/mm {kgf/mm}	F=L×16% Fmm	Load N {kgf}	F=L×18% Fmm	Load N {kgf}	F=L×20% Fmm	Load N {kgf}	Catalog No. Type D—L	Base unit price 1～19 pieces
Operation count				1,000,000		500,000		300,000			
16	8	20	245 {25.0}	3.2	784 {80}	3.6	882 {90}	4.0	980 {100}	SWB16—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	980 {100}	3.6	1103 {113}	4.0	1225 {125}	SWB18—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	1254 {128}	3.6	1411 {144}	4.0	1568 {160}	SWB20—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	1530 {156}	4.5	1721 {175}	5.0	1912 {195}	SWB22—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	

Quotation

Order — Catalog No. SWB 20—80

Days to Ship — Quotation

Price — Quotation

D	d	L	Spring constant N/mm {kgf/mm}	F=L×16% Fmm	Load N {kgf}	F=L×18% Fmm	Load N {kgf}	F=L×20% Fmm	Load N {kgf}	Catalog No. Type D—L	Base unit price 1～19 pieces
Operation count				1,000,000		500,000		300,000			
25	12.5	25	481 {49.0}	4.0	1922 {196}	4.5	2162 {220}	5.0	2403 {245}	SWB25—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	
27	13.5	25	569 {58.0}	4.0	2275 {232}	4.5	2560 {261}	5.0	2844 {290}	SWB27—25	
		30	474 {48.3}	4.8		5.4		6.0		30	
		35	406 {41.4}	5.6		6.3		7.0		35	
		40	355 {36.2}	6.4		7.2		8.0		40	
		45	316 {32.2}	7.2		8.1		9.0		45	
		50	284 {29.0}	8.0		9.0		10.0		50	
		55	259 {26.4}	8.8		9.9		11.0		55	
		60	237 {24.2}	9.6		10.8		12.0		60	
		65	219 {22.3}	10.4		11.7		13.0		65	
		70	203 {20.7}	11.2		12.6		14.0		70	
		75	190 {19.3}	12.0		13.5		15.0		75	
		80	178 {18.1}	12.8		14.4		16.0		80	
		90	158 {16.1}	14.4		16.2		18.0		90	
		100	142 {14.5}	16.0		18.0		20.0		100	
		125	114 {11.6}	20.0		22.5		25.0		125	
		150	94.8 {9.7}	24.0		27.0		30.0		150	
		175	81.3 {8.3}	28.0		31.5		35.0		175	
30	15	25	706 {72.0}	4.0	2824 {288}	4.5	3177 {324}	5.0	3530 {360}	SWB30—25	
		30	588 {60.0}	4.8		5.4		6.0		30	
		35	504 {51.4}	5.6		6.3		7.0		35	
		40	441 {45.0}	6.4		7.2		8.0		40	
		45	392 {40.0}	7.2		8.1		9.0		45	
		50	353 {36.0}	8.0		9.0		10.0		50	
		55	321 {32.7}	8.8		9.9		11.0		55	
		60	294 {30.0}	9.6		10.8		12.0		60	
		65	272 {27.7}	10.4		11.7		13.0		65	
		70	252 {25.7}	11.2		12.6		14.0		70	
		75	235 {24.0}	12.0		13.5		15.0		75	
		80	221 {22.5}	12.8		14.4		16.0		80	
		90	196 {20.0}	14.4		16.2		18.0		90	
		100	177 {18.0}	16.0		18.0		20.0		100	
		125	141 {14.4}	20.0		22.5		25.0		125	
		150	118 {12.0}	24.0		27.0		30.0		150	
		175	101 {10.3}	28.0		31.5		35.0		175	
		200	88.3 {9.0}	32.0		36.0		40.0		200	
35	17.5	40	600 {61.2}	6.4	3842 {392}	7.2	4322 {441}	8.0	4802 {490}	SWB35—40	
		45	534 {54.4}	7.2		8.1		9.0		45	
		50	480 {49.0}	8.0		9.0		10.0		50	
		55	437 {44.5}	8.8		9.9		11.0		55	
		60	400 {40.8}	9.6		10.8		12.0		60	
		65	369 {37.7}	10.4		11.7		13.0		65	
		70	343 {35.0}	11.2		12.6		14.0		70	
		75	320 {32.6}	12.0		13.5		15.0		75	
		80	300 {30.6}	12.8		14.4		16.0		80	
		90	267 {27.2}	14.4		16.2		18.0		90	
		100	240 {24.5}	16.0		18.0		20.0		100	
		125	192 {19.6}	20.0		22.5		25.0		125	
		150	160 {16.3}	24.0		27.0		30.0		150	
		175	137 {14.0}	28.0		31.5		35.0		175	
		200	120 {12.2}	32.0		36.0		40.0		200	

Quotation

●Load calculation method: Load=Spring constant×Deflection
(SI unit) N=N/mm×Fmm
kgf=kgf/mm×Fmm
(kgf=N×0.101972)

Product guide P.1396 Load graph P.1432
Instructions and precautions for the use of coil springs P.1397
Clearance of D dim. and counterbore hole, and of d dim. and shaft P.1397

D	d	L	Spring constant N/mm {kgf/mm}	F=L×16% Fmm	Load N {kgf}	F=L×18% Fmm	Load N {kgf}	F=L×20% Fmm	Load N {kgf}	Catalog No. Type D—L	Base unit price 1～19 pieces
Operation count				1,000,000		500,000		300,000			
40	20	40	784 {79.9}	6.4	5018 {512}	7.2	5645 {576}	8.0	6272 {640}	SWB40—40	
		45	697 {71.1}	7.2		8.1		9.0		45	
		50	627 {64.0}	8.0		9.0		10.0		50	
		55	570 {58.1}	8.8		9.9		11.0		55	
		60	523 {53.3}	9.6		10.8		12.0		60	
		65	482 {49.2}	10.4		11.7		13.0		65	
		70	448 {45.7}	11.2		12.6		14.0		70	
		75	418 {42.6}	12.0		13.5		15.0		75	
		80	392 {40.0}	12.8		14.4		16.0		80	
		90	348 {35.5}	14.4		16.2		18.0		90	
		100	314 {32.0}	16.0		18.0		20.0		100	
		125	251 {25.6}	20.0		22.5		25.0		125	
		150	209 {21.3}	24.0		27.0		30.0		150	
		175	179 {18.3}	28.0		31.5		35.0		175	
		200	157 {16.0}	32.0		36.0		40.0		200	
		225	139 {14.2}	36.0		40.5		45.0		225	
		250	125 {12.8}	40.0		45.0		50.0		250	
		275	114 {11.6}	44.0		49.5		55.0		275	
		300	105 {10.7}	48.0		54.0		60.0		300	
50	25	50	980 {100.0}	8.0	7840 {800}	9.0	8820 {900}	10.0	9800 {1000}	SWB50—50	
		55	891 {90.9}	8.8		9.9		11.0		55	
		60	817 {83.3}	9.6		10.8		12.0		60	
		65	754 {76.9}	10.4		11.7		13.0		65	
		70	700 {71.4}	11.2		12.6		14.0		70	
		75	653 {66.7}	12.0		13.5		15.0		75	
		80	613 {62.5}	12.8		14.4		16.0		80	
		90	544 {55.6}	14.4		16.2		18.0		90	
		100	490 {50.0}	16.0		18.0		20.0		100	
		125	392 {40.0}	20.0		22.5		25.0		125	
		150	327 {33.3}	24.0		27.0		30.0		150	
		175	280 {28.6}	28.0		31.5		35.0		175	
		200	245 {25.0}	32.0		36.0		40.0		200	
		225	218 {22.2}	36.0		40.5		45.0		225	
		250	196 {20.0}	40.0		45.0		50.0		250	
		275	178 {18.2}	44.0		49.5		55.0		275	
		300	163 {16.7}	48.0		54.0		60.0		300	
		350	140 {14.3}	56.0		63.0		70.0		350	
60	30	60	1176 {120.0}	9.6	11290 {1152}	10.8	12701 {1296}	12.0	14112 {1440}	SWB60—60	
		70	1008 {102.9}	11.2		12.6		14.0		70	
		80	882 {90.0}	12.8		14.4		16.0		80	
		90	784 {80.0}	14.4		16.2		18.0		90	
		100	706 {72.0}	16.0		18.0		20.0		100	
		125	564 {57.6}	20.0		22.5		25.0		125	
		150	470 {48.0}	24.0		27.0		30.0		150	
		175	403 {41.1}	28.0		31.5		35.0		175	
		200	353 {36.0}	32.0		36.0		40.0		200	
		225	314 {32.0}	36.0		40.5		45.0		225	
		250	282 {28.8}	40.0		45.0		50.0		250	
		275	257 {26.2}	44.0		49.5		55.0		275	
		300	235 {24.0}	48.0		54.0		60.0		300	
		350	202 {20.6}	56.0		63.0		70.0		350	
70	38.5	70	1219 {124.3}	11.2	13655 {1392}	12.6	15362 {1567}	14.0	17069 {1740}	SWB70—70	
		80	1067 {108.8}	12.8		14.4		16.0		80	
		90	948 {96.7}	14.4		16.2		18.0		90	
		100	853 {87.0}	16.0		18.0		20.0		100	
		125	683 {69.6}	20.0		22.5		25.0		125	
		150	569 {58.0}	24.0		27.0		30.0		150	
		175	488 {49.7}	28.0		31.5		35.0		175	
		200	427 {43.5}	32.0		36.0		40.0		200	
		250	341 {34.8}	40.0		45.0		50.0		250	
		300	284 {29.0}	48.0		54.0		60.0		300	
		350	244 {24.9}	56.0		63.0		70.0		350	

Quotation

Alterations — (NT) — Catalog No. NT — SWB 30—60 — Quotation

Alteration	Code	Spec.	Price
No coating	NT	**Coating removal** Removal of the coil spring coating by shot peening. Springs with the coating removed are extremely susceptible to corrosion. Handle them with care. Corrosion of the spring will result in early breakage. There may be greater variation in the load capacity and other characteristics between lots than with ordinary coated products.	Quotation