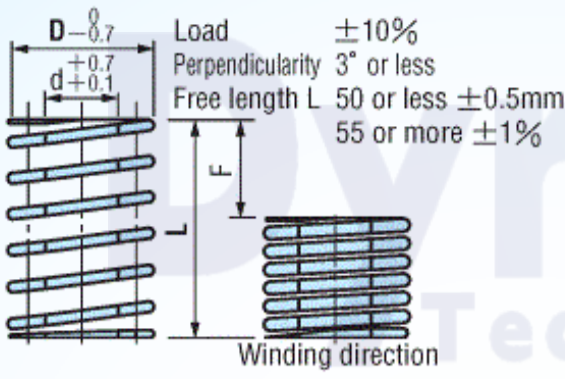


Economy Coil Spring - DE-SWL

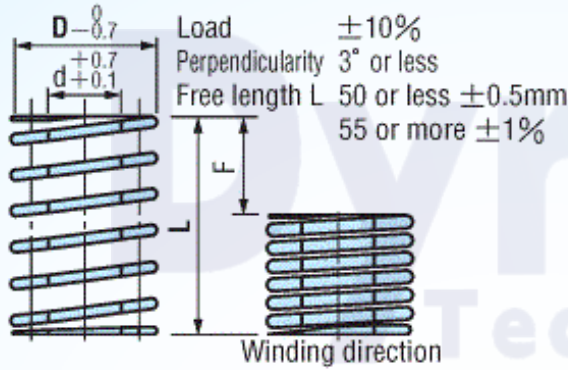


Part Number	D	d	L	Spring Constant		F = L x 32%		F = L x 36%	
				N/mm (kgf/mm)	Fmm	Load N(Kgf)	Fmm	Load N(Kgf)	
									Operation Count
DE-SWL6-15	6	3	15	13.1 (1.33)	4.8	63 (6.4)	5.4	71 (7.2)	
20			9.8 (1.00)	6.4	7.2				
25			7.8 (0.80)	8	9				
30			6.5 (0.67)	9.6	10.8				
35			5.6 (0.57)	11.2	12.6				
40			4.9 (0.50)	12.8	14.4				
DE-SWL8-10	8	4	10	24.5 (2.50)	3.2	78 (8.0)	3.6	88 (9.0)	
15			16.3 (1.67)	4.8	5.4				
20			12.3 (1.25)	6.4	7.2				
25			9.8 (1.00)	8	9				
30			8.2 (0.83)	9.6	10.8				
35			7.0 (0.71)	11.2	12.6				
40			6.1 (0.63)	12.8	14.4				
45			5.4 (0.56)	14.4	16.2				
50			4.9 (0.50)	16	18				
55			4.5 (0.45)	17.6	19.8				
60			4.1 (0.42)	19.2	21.6				
65			3.8 (0.38)	20.8	23.4				
70	3.5 (0.36)	22.4	25.2						
75	3.3 (0.33)	24	27						
80	3.1 (0.31)	25.6	28.8						
DE-SWL10-10	10	5	10	34.3 (3.50)	3.2	110 (11)	3.6	124 (13)	
15			22.9 (2.33)	4.8	5.4				
20			17.2 (1.75)	6.4	7.2				
25			13.7 (1.40)	8	9				
30			11.4 (1.17)	9.6	10.8				
35			9.8 (1.00)	11.2	12.6				
40			8.6 (0.88)	12.8	14.4				
45			7.6 (0.78)	14.4	16.2				
50			6.9 (0.70)	16	18				
55			6.2 (0.64)	17.6	19.8				
60			5.7 (0.58)	19.2	21.6				
65			5.3 (0.54)	20.8	23.4				
70			4.9 (0.50)	22.4	25.2				
75			4.6 (0.47)	24	27				
80	4.3 (0.44)	25.6	28.8						
90	3.8 (0.39)	28.8	32.4						
DE-SWL12-15	12	6	15	34.3 (2.63)	4.8	165 (17)	5.4	185 (19)	
20			25.7 (2.63)	6.4	7.2				
25			20.6 (2.10)	8	9				
30			17.2 (1.75)	9.6	10.8				
35			14.7 (1.50)	11.2	12.6				
40			12.9 (1.31)	12.8	14.4				
45			11.4 (1.17)	14.4	16.2				
50			10.3 (1.05)	16	18				
55			9.4 (0.95)	17.6	19.8				
60			8.6 (0.88)	19.2	21.6				
65			7.9 (0.81)	20.8	23.4				
70			7.4 (0.75)	22.4	25.2				
75			6.9 (0.70)	24	27				
80			6.4 (0.66)	25.6	28.8				
90	5.7 (0.58)	28.8	32.4						
DE-SWL14-20	14	7	20	34.3 (3.50)	6.4	220 (22)	7.2	247 (25)	
25			27.5 (2.80)	8	9				
30			22.9 (2.33)	9.6	10.8				
35			19.6 (2.00)	11.2	12.6				
40			17.2 (1.75)	12.8	14.4				
45			15.3 (1.56)	14.4	16.2				
50			13.7 (1.40)	16	18				
55			12.5 (1.27)	17.6	19.8				
60			11.4 (1.17)	19.2	21.6				
65			10.6 (1.08)	20.8	23.4				
70			9.8 (1.00)	22.4	25.2				
75			9.2 (0.93)	24	27				
80			8.6 (0.88)	25.6	28.8				
90			7.6 (0.78)	28.8	32.4				
100	6.9 (0.70)	32	36						
DE-SWL16-20	16	8	20	42.9 (4.38)	6.4	275 (28)	7.2	309 (32)	
25			34.3 (3.50)	8	9				
30			28.6 (2.92)	9.6	10.8				
35			24.5 (2.50)	11.2	12.6				
40			21.5 (2.19)	12.8	14.4				
45			19.1 (1.94)	14.4	16.2				
50			17.2 (1.75)	16	18				
55			15.6 (1.59)	17.6	19.8				
60			14.3 (1.46)	19.2	21.6				
65			13.2 (1.35)	20.8	23.4				
70			12.3 (1.25)	22.4	25.2				
75			11.4 (1.17)	24	27				
80			10.7 (1.09)	25.6	28.8				
90			9.5 (0.97)	28.8	32.4				
100	8.6 (0.88)	32	36						
125	6.9 (0.70)	40	45						

Part Number	D	d	L	Spring Constant		F = L x 32%		F = L x 36%	
				N/mm (kgf/mm)	Fmm	Load N(Kgf)	Fmm	Load N(Kgf)	
									Operation Count
DE-SWL18-20	18	9	20	52.7 (5.38)	6.4	337 (34)	7.2	380 (39)	
25			42.2 (4.30)	8	9				
30			35.1 (3.58)	9.6	10.8				
35			30.1 (3.07)	11.2	12.6				
40			26.4 (2.69)	12.8	14.4				
45			23.4 (2.39)	14.4	16.2				
50			21.1 (2.15)	16	18				
55			19.2 (1.95)	17.6	19.8				
60			17.6 (1.79)	19.2	21.6				
65			16.2 (1.65)	20.8	23.4				
70			15.1 (1.54)	22.4	25.2				
75			14.1 (1.43)	24	27				
80			13.2 (1.34)	25.6	28.8				
90			11.7 (1.19)	28.8	32.4				
100	10.5 (1.08)	32	36						
125	8.4 (0.86)	40	45						
DE-SWL20-20	20	10	20	66.2 (6.75)	6.4	424 (43)	7.2	424 (43)	
25			53.0 (5.40)	8	9				
30			44.1 (4.50)	9.6	10.8				
35			37.8 (3.86)	11.2	12.6				
40			33.1 (3.38)	12.8	14.4				
45			29.4 (3.00)	14.4	16.2				
50			26.5 (2.70)	16	18				
55			24.1 (2.45)	17.6	19.8				
60			22.1 (2.25)	19.2	21.6				
65			20.4 (2.08)	20.8	23.4				
70			18.9 (1.93)	22.4	25.2				
75			17.7 (1.80)	24	27				
80			16.5 (1.69)	25.6	28.8				
90			14.7 (1.50)	28.8	32.4				
100	13.2 (1.35)	32	36						
125	10.6 (1.08)	40	45						
150	8.8 (0.90)	48	54						
DE-SWL22-25	22	11	25	65.7 (6.70)	8	526 (54)	9	591 (60)	
30			54.8 (5.58)	9.6	10.8				
35			46.9 (4.79)	11.2	12.6				
40			41.1 (4.19)	12.8	14.4				
45			36.5 (3.72)	14.4	16.2				
50			32.9 (3.35)	16	18				
55			29.9 (3.05)	17.6	19.8				
60			27.4 (2.79)	19.2	21.6				
65			25.3 (2.58)	20.8	23.4				
70			23.5 (2.39)	22.4	25.2				
75			21.9 (2.23)	24	27				
80			20.5 (2.09)	25.6	28.8				
90			18.3 (1.86)	28.8	32.4				
100			16.4 (1.68)	32	36				
125	13.1 (1.34)	40	45						
150	11.0 (1.12)	48	54						
DE-SWL25-25	25	12.5	25	82.4 (8.40)	8	659 (67)	9	741 (76)	
30			68.6 (7.00)	9.6	10.8				
35			58.8 (6.00)	11.2	12.6				
40			51.5 (5.25)	12.8	14.4				
45			45.8 (4.67)	14.4	16.2				
50			41.2 (4.20)	16	18				
55			37.4 (3.82)	17.6	19.8				
60			34.3 (3.50)	19.2	21.6				
65			31.7 (3.23)	20.8	23.4				
70			29.4 (3.00)	22.4	25.2				
75			27.5 (2.80)	24	27				
80			25.7 (2.63)	25.6	28.8				
90			22.9 (2.33)	28.8	32.4				
100			20.6 (2.10)	32	36				
125	16.5 (1.68)	40	45						
150	13.7 (1.40)	48	54						
175	11.8 (1.20)	56	63						
200	10.3 (1.05)	64	72						
DE-SWL27-25	27	13.5	25	98.1 (10.0)	8	785 (80)	9	883 (90)	
30			81.7 (8.33)	9.6	10.8				
35			70.0 (7.14)	11.2	12.6				
40			61.3 (6.25)	12.8	14.4				
45			54.5 (5.56)	14.4	16.2				
50			49.0 (5.00)	16	18				
55			44.6 (4.55)	17.6	19.8				
60			40.9 (4.17)	19.2	21.6				
65			37.7 (3.85)	20.8	23.4				
70			35.0 (3.57)	22.4	25.2				
75			32.7 (3.33)	24	27				
80			30.6 (3.13)	25.6	28.8				
90			27.2 (2.78)	28.8	32.4				
100			24.5 (2.50)	32	36				
125	19.6 (2.00)	40	45						
150	16.3 (1.67)	48	54						
175	14.0 (1.43)	56	63						
200	12.3 (1.25)	64	72						



Economy Coil Spring - DE-SWL



Part Number	D	d	L	Spring Constant	F = L x 32%		F = L x 36%	
				N/mm (kgf/mm)	Fmm	Load N(Kgf)	Fmm	Load N(Kgf)
Type D - L	Operation Count			1000000	500000			
DE-SWL30 - 25	30	15	25	119.0 (12.1)	8	949 (97)	9	1067 (109)
30			98.8 (10.1)	9.6	10.8			
35			84.7 (8.64)	11.2	12.6			
40			74.1 (7.56)	12.8	14.4			
45			65.9 (6.72)	14.4	16.2			
50			59.3 (6.05)	16	18			
55			53.9 (5.50)	17.6	19.8			
60			49.4 (5.04)	19.2	21.6			
65			45.6 (4.65)	20.8	23.4			
70			42.4 (4.32)	22.4	25.2			
75			39.5 (4.03)	24	27			
80			37.1 (3.78)	25.6	28.8			
90			32.9 (3.36)	28.8	32.4			
100			29.7 (3.02)	32	36			
125			23.7 (2.42)	40	45			
150	19.8 (2.02)	48	54					
175	16.9 (1.73)	56	63					
200	14.8 (1.51)	64	72					
DE-SWL35 - 40	35	17.5	40	101.0 (10.3)	12.8	1294 (132)	14.4	1455 (148)
45			89.8 (9.16)	14.4	16.2			
50			80.9 (8.24)	16	18			
55			73.5 (7.49)	17.6	19.8			
60			67.4 (6.87)	19.2	21.6			
65			62.2 (6.34)	20.8	23.4			
70			57.8 (5.89)	22.4	25.2			
75			53.9 (5.50)	24	27			
80			50.5 (5.15)	25.6	28.8			
90			44.9 (4.58)	28.8	32.4			
100			40.4 (4.12)	32	36			
125			32.3 (3.30)	40	45			
150			27.0 (2.75)	48	54			
175			23.1 (2.36)	56	63			
200			20.2 (2.06)	64	72			
DE-SWL40 - 40	40	20	40	132.0 (13.50)	12.8	1694 (173)	14.4	1905 (194)
45			118.0 (12.00)	14.4	16.2			
50			106.0 (10.80)	16	18			
55			96.2 (9.81)	17.6	19.8			
60			88.2 (8.99)	19.2	21.6			
65			81.4 (8.30)	20.8	23.4			
70			75.6 (7.71)	22.4	25.2			
75			70.6 (7.20)	24	27			
80			66.2 (6.75)	25.6	28.8			
90			58.8 (6.00)	28.8	32.4			
100			52.9 (5.40)	32	36			
125			42.3 (4.32)	40	45			
150			35.3 (3.60)	48	54			
175			30.2 (3.08)	56	63			
200			26.5 (2.70)	64	72			
225	23.5 (2.40)	72	81					
250	21.2 (2.16)	80	90					
275	19.2 (1.96)	88	99					
300	17.6 (1.80)	96	108					

Part Number	D	d	L	Spring Constant	F = L x 32%		F = L x 36%	
				N/mm (kgf/mm)	Fmm	Load N(Kgf)	Fmm	Load N(Kgf)
Type D - L	Operation Count			1000000	500000			
DE-SWL50 - 50	50	25	50	166.0 (16.9)	16	2650 (270)	18	2981 (304)
55			151.0 (15.4)	17.6	19.8			
60			138.0 (14.1)	19.2	21.6			
65			127.0 (13.0)	20.8	23.4			
70			118.0 (12.1)	22.4	25.2			
75			110.0 (11.3)	24	27			
80			104.0 (10.6)	25.6	28.8			
90			92.0 (9.38)	28.8	32.4			
100			82.8 (8.44)	32	36			
125			66.2 (6.75)	40	45			
150			55.2 (5.63)	48	54			
175			47.3 (4.82)	56	63			
200			41.4 (4.22)	64	72			
225			36.8 (3.75)	72	81			
250			33.1 (3.38)	80	90			
275	30.1 (3.07)	88	99					
300	27.6 (2.81)	96	108					
350	23.7 (2.41)	112	126					
400	20.7 (2.11)	128	144					
DE-SWL60 - 60	60	30	60	199.0 (20.3)	19.2	3816 (389)	21.6	4293 (438)
70			170.0 (17.4)	22.4	25.2			
80			149.0 (15.2)	25.6	28.8			
90			133.0 (13.5)	28.8	32.4			
100			119.0 (12.2)	32	36			
125			95.4 (9.73)	40	45			
150			79.5 (8.11)	48	54			
175			68.1 (6.95)	56	63			
200			59.6 (6.08)	64	72			
225			53.0 (5.40)	72	81			
250			47.7 (4.86)	80	90			
275			43.4 (4.42)	88	99			
300			39.8 (4.05)	96	108			
350			34.1 (3.47)	112	126			
400			29.8 (3.04)	128	144			
DE-SWL70 - 70	70	38.5	70	214 (21.8)	22.4	4782 (488)	25.2	5380 (549)
80			187 (19.0)	25.6	28.8			
90			166 (16.9)	28.8	32.4			
100			149 (15.2)	32	36			
125			120 (12.2)	40	45			
150			99.6 (10.2)	48	54			
175			85.4 (8.71)	56	63			
200			74.7 (7.62)	64	72			
250			59.8 (6.10)	80	90			
300			49.8 (5.08)	96	108			
350			42.7 (4.35)	112	126			

● Load calculation method: Load = Spring constant × Deflection

(SI units) N = N/mm × Fmm
 kgf = kgf/mm × Fmm
 (kgf = N × 0.101972)

