

Outside Dia.	Inside Dia.	Free Length	Spring Code	Spring Constant	0.3 million		0.5 million		1 million	
					Deflection	Load	Deflection	Load	Deflection	Load
					mm	Kgf (N)	mm	Kgf (N)	mm	Kgf (N)
10	5									
		20	SF 10 - 020	1.00	10.0		9.0		8.0	
		25	SF 10 - 025	0.80	12.5		11.2		10.0	
		30	SF 10 - 030	0.67	15.0		13.5		12.0	
		35	SF 10 - 035	0.57	17.5		15.7		14.0	
		40	SF 10 - 040	0.50	20.0		18.0		16.0	
		45	SF 10 - 045	0.44	22.5		20.2		18.0	
		50	SF 10 - 050	0.40	25.0	10	22.5	9	20.0	8
		55	SF 10 - 055	0.36	27.5	(98.1)	24.7	(88.3)	22.0	(78.5)
		60	SF 10 - 060	0.33	30.0		27.0		24.0	
		65	SF 10 - 065	0.31	32.5		29.2		26.0	
		70	SF 10 - 070	0.29	35.0		31.5		28.0	
75	SF 10 - 075	0.27	37.5		33.7		30.0			
80	SF 10 - 080	0.25	40.0		36.0		32.0			
12	6									
		20	SF 12 - 020	1.40	10.0		9.0		8.0	
		25	SF 12 - 025	1.12	12.5		11.2		10.0	
		30	SF 12 - 030	0.93	15.0		13.5		12.0	
		35	SF 12 - 035	0.80	17.5		15.7		14.0	
		40	SF 12 - 040	0.70	20.0		18.0		16.0	
		45	SF 12 - 045	0.62	22.5		20.2		18.0	
		50	SF 12 - 050	0.56	25.0	14	22.5	12.5	20.0	11
		55	SF 12 - 055	0.51	27.5	(137.3)	24.7	(122.6)	22.0	(107.9)
		60	SF 12 - 060	0.47	30.0		27.0		24.0	
		65	SF 12 - 065	0.43	32.5		29.2		26.0	
		70	SF 12 - 070	0.40	35.0		31.5		28.0	
75	SF 12 - 075	0.37	37.5		33.7		30.0			
80	SF 12 - 080	0.35	40.0		36.0		32.0			
14	7									
		25	SF 14 - 025	1.44	12.5		11.2		10.0	
		30	SF 14 - 030	1.20	15.0		13.5		12.0	
		35	SF 14 - 035	1.03	17.5		15.7		14.0	
		40	SF 14 - 040	0.90	20.0		18.0		16.0	
		45	SF 14 - 045	0.80	22.5		20.2		18.0	
		50	SF 14 - 050	0.72	25.0		22.5		20.0	
		55	SF 14 - 055	0.65	27.5		24.7		22.0	
		60	SF 14 - 060	0.60	30.0	18	27.0	16	24.0	14.5
		65	SF 14 - 065	0.55	32.5	(176.5)	29.2	(156.9)	26.0	(142.2)
		70	SF 14 - 070	0.51	35.0		31.5		28.0	
		75	SF 14 - 075	0.48	37.5		33.7		30.0	
80	SF 14 - 080	0.45	40.0		36.0		32.0			
90	SF 14 - 090	0.40	45.0		40.5		36.0			
16	8									
		25	SF 16 - 025	1.68	12.5		11.2		10.0	
		30	SF 16 - 030	1.40	15.0		13.5		12.0	
		35	SF 16 - 035	1.20	17.5		15.7		14.0	
		40	SF 16 - 040	1.05	20.0		18.0		16.0	
		45	SF 16 - 045	0.94	22.5		20.2		18.0	
		50	SF 16 - 050	0.84	25.0		22.5		20.0	
		55	SF 16 - 055	0.77	27.5		24.7		22.0	
		60	SF 16 - 060	0.70	30.0	21	27.0	19	24.0	17
		65	SF 16 - 065	0.65	32.5	(206)	29.2	(186.3)	26.0	(166.7)
		70	SF 16 - 070	0.60	35.0		31.5		28.0	
		75	SF 16 - 075	0.56	37.5		33.7		30.0	
80	SF 16 - 080	0.53	40.0		36.0		32.0			
90	SF 16 - 090	0.47	45.0		40.5		36.0			
100	SF 16 - 100	0.42	50.0		45.0		40.0			





Outside Dia.	Inside Dia.	Free Length	Spring Code	Spring Constant	0.3 million		0.5 million		1 million	
					Deflection	Load	Deflection	Load	Deflection	Load
mm	mm	mm		Kgf / mm	mm	Kgf (N)	mm	Kgf (N)	mm	Kgf (N)
18	9	25	SF 18 - 025	2.08	12.5	26 (255)	11.2	23 (225)	10.0	21 (206)
		30	SF 18 - 030	1.74	15.0		13.5		12.0	
		35	SF 18 - 035	1.49	17.5		15.7		14.0	
		40	SF 18 - 040	1.30	20.0		18.0		16.0	
		45	SF 18 - 045	1.16	22.5		20.2		18.0	
		50	SF 18 - 050	1.04	25.0		22.5		20.0	
		55	SF 18 - 055	0.95	27.5		24.7		22.0	
		60	SF 18 - 060	0.87	30.0		27.0		24.0	
		65	SF 18 - 065	0.80	32.5		29.2		26.0	
		70	SF 18 - 070	0.74	35.0		31.5		28.0	
		75	SF 18 - 075	0.70	37.5		33.7		30.0	
		80	SF 18 - 080	0.65	40.0		36.0		32.0	
		90	SF 18 - 090	0.58	45.0		40.5		36.0	
100	SF 18 - 100	0.52	50.0	45.0	40.0					
20	11	25	SF 20 - 025	2.56	12.5	32 (314)	11.2	29 (284)	10.0	26 (255)
		30	SF 20 - 030	2.13	15.0		13.5		12.0	
		35	SF 20 - 035	1.83	17.5		15.7		14.0	
		40	SF 20 - 040	1.60	20.0		18.0		16.0	
		45	SF 20 - 045	1.42	22.5		20.2		18.0	
		50	SF 20 - 050	1.28	25.0		22.5		20.0	
		55	SF 20 - 055	1.16	27.5		24.7		22.0	
		60	SF 20 - 060	1.07	30.0		27.0		24.0	
		65	SF 20 - 065	0.98	32.5		29.2		26.0	
		70	SF 20 - 070	0.91	35.0		31.5		28.0	
		75	SF 20 - 075	0.85	37.5		33.7		30.0	
		80	SF 20 - 080	0.80	40.0		36.0		32.0	
		90	SF 20 - 090	0.71	45.0		40.5		36.0	
100	SF 20 - 100	0.64	50.0	45.0	40.0					
125	SF 20 - 125	0.51	62.5	56.2	50.0					
150	SF 20 - 150	0.43	75.0	67.5	60.0					
22	11	25	SF 22 - 025	3.20	12.5	40 (392)	11.2	36 (353)	10.0	32 (314)
		30	SF 22 - 030	2.67	15.0		13.5		12.0	
		35	SF 22 - 035	2.29	17.5		15.7		14.0	
		40	SF 22 - 040	2.00	20.0		18.0		16.0	
		45	SF 22 - 045	1.78	22.5		20.2		18.0	
		50	SF 22 - 050	1.60	25.0		22.5		20.0	
		55	SF 22 - 055	1.46	27.5		24.7		22.0	
		60	SF 22 - 060	1.33	30.0		27.0		24.0	
		65	SF 22 - 065	1.23	32.5		29.2		26.0	
		70	SF 22 - 070	1.14	35.0		31.5		28.0	
		75	SF 22 - 075	1.07	37.5		33.7		30.0	
		80	SF 22 - 080	1.00	40.0		36.0		32.0	
		90	SF 22 - 090	0.89	45.0		40.5		36.0	
100	SF 22 - 100	0.80	50.0	45.0	40.0					
125	SF 22 - 125	0.64	62.5	56.2	50.0					
150	SF 22 - 150	0.53	75.0	67.5	60.0					
25	13.5	25	SF 25 - 025	4.00	12.5	50 (490)	11.2	45 (441)	10.0	40 (392)
		30	SF 25 - 030	3.33	15.0		13.5		12.0	
		35	SF 25 - 035	2.85	17.5		15.7		14.0	
		40	SF 25 - 040	2.50	20.0		18.0		16.0	
		45	SF 25 - 045	2.22	22.5		20.2		18.0	
		50	SF 25 - 050	2.00	25.0		22.5		20.0	
		55	SF 25 - 055	1.82	27.5		24.7		22.0	
		60	SF 25 - 060	1.67	30.0		27.0		24.0	
		65	SF 25 - 065	1.54	32.5		29.2		26.0	
		70	SF 25 - 070	1.43	35.0		31.5		28.0	
		75	SF 25 - 075	1.33	37.5		33.7		30.0	
		80	SF 25 - 080	1.25	40.0		36.0		32.0	
		90	SF 25 - 090	1.11	45.0		40.5		36.0	
100	SF 25 - 100	1.00	50.0	45.0	40.0					
125	SF 25 - 125	0.80	62.5	56.2	50.0					
150	SF 25 - 150	0.67	75.0	67.5	60.0					
175	SF 25 - 175	0.57	87.5	78.7	70.0					



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					Deflection	Load	Deflection	Load	Deflection	Load
					mm	Kgf (N)	mm	Kgf (N)	mm	Kgf (N)
27	13.5	25	SF 27 - 025	4.80	12.5	60 (588)	11.2	54 (530)	10.0	48 (471)
		30	SF 27 - 030	4.00	15.0		13.5		12.0	
		35	SF 27 - 035	3.43	17.5		15.7		14.0	
		40	SF 27 - 040	3.00	20.0		18.0		16.0	
		45	SF 27 - 045	2.67	22.5		20.2		18.0	
		50	SF 27 - 050	2.40	25.0		22.5		20.0	
		55	SF 27 - 055	2.18	27.5		24.7		22.0	
		60	SF 27 - 060	2.00	30.0		27.0		24.0	
		65	SF 27 - 065	1.85	32.5		29.2		26.0	
		70	SF 27 - 070	1.71	35.0		31.5		28.0	
		75	SF 27 - 075	1.60	37.5		33.7		30.0	
		80	SF 27 - 080	1.50	40.0		36.0		32.0	
		90	SF 27 - 090	1.33	45.0		40.5		36.0	
		100	SF 27 - 100	1.20	50.0		45.0		40.0	
		125	SF 27 - 125	0.96	62.5		56.2		50.0	
150	SF 27 - 150	0.80	75.0	67.5	60.0					
175	SF 27 - 175	0.69	87.5	78.7	70.0					
30	16	25	SF 30 - 025	5.80	12.5	72 (706)	11.2	65 (637)	10.0	58 (569)
		30	SF 30 - 030	4.80	15.0		13.5		12.0	
		35	SF 30 - 035	4.13	17.5		15.7		14.0	
		40	SF 30 - 040	3.60	20.0		18.0		16.0	
		45	SF 30 - 045	3.21	22.5		20.2		18.0	
		50	SF 30 - 050	2.88	25.0		22.5		20.0	
		55	SF 30 - 055	2.63	27.5		24.7		22.0	
		60	SF 30 - 060	2.40	30.0		27.0		24.0	
		65	SF 30 - 065	2.22	32.5		29.2		26.0	
		70	SF 30 - 070	2.05	35.0		31.5		28.0	
		75	SF 30 - 075	1.93	37.5		33.7		30.0	
		80	SF 30 - 080	1.80	40.0		36.0		32.0	
		90	SF 30 - 090	1.60	45.0		40.5		36.0	
		100	SF 30 - 100	1.44	50.0		45.0		40.0	
		125	SF 30 - 125	1.15	62.5		56.2		50.0	
150	SF 30 - 150	0.96	75.0	67.5	60.0					
175	SF 30 - 175	0.82	87.5	78.7	70.0					
200	SF 30 - 200	0.72	100.0	90.0	80.0					
35	21	40	SFR 35 - 040	4.90	20.0	98 (961)	18.0	88.2 (864.4)	16.0	78.4 (768.3)
		45	SFR 35 - 045	4.36	22.5		20.25		18.0	
		50	SFR 35 - 050	3.92	25.0		22.5		20.0	
		55	SFR 35 - 055	3.56	27.5		24.75		22.0	
		60	SFR 35 - 060	3.26	30.0		27.0		24.0	
		65	SFR 35 - 065	3.02	32.5		29.25		26.0	
		70	SFR 35 - 070	2.80	35.0		31.5		28.0	
		75	SFR 35 - 075	2.61	37.5		33.75		30.0	
		80	SFR 35 - 080	2.45	40.0		36.0		32.0	
		90	SFR 35 - 090	2.17	45.0		40.5		36.0	
		100	SFR 35 - 100	1.96	50.0		45.0		40.0	
		125	SFR 35 - 125	1.57	62.5		56.25		50.0	
		150	SFR 35 - 150	1.30	75.0		67.5		60.0	
175	SFR 35 - 175	1.12	87.5	78.75	70.0					
200	SFR 35 - 200	0.98	100.0	90.0	80.0					
40	22	40	SF 40 - 040	6.38	20.0	128 (1,255)	18.0	115 (1,128)	16.0	102 (1,000)
		50	SF 40 - 050	5.12	25.0		22.5		20.0	
		60	SF 40 - 060	4.26	30.0		27.0		24.0	
		70	SF 40 - 070	3.65	35.0		31.5		28.0	
		80	SF 40 - 080	3.20	40.0		36.0		32.0	
		90	SF 40 - 090	2.84	45.0		40.5		36.0	
		100	SF 40 - 100	2.56	50.0		45.0		40.0	
		125	SF 40 - 125	2.04	62.5		56.2		50.0	
		150	SF 40 - 150	1.70	75.0		67.5		60.0	
		175	SF 40 - 175	1.46	87.5		78.7		70.0	
		200	SF 40 - 200	1.28	100.0		90.0		80.0	
		250	SF 40 - 250	1.02	125.0		112.5		100.0	





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					Deflection	Load	Deflection	Load	Deflection	Load
					mm	Kgf (N)	mm	Kgf (N)	mm	Kgf (N)
40	26	40	SFR 40 - 040	4.00	20.0	65 (637)	18.0	58.5 (573.3)	16.0	52 (509.6)
		50	SFR 40 - 050	3.20	25.0		22.5		20.0	
		60	SFR 40 - 060	2.60	30.0		27.0		24.0	
		70	SFR 40 - 070	2.35	35.0		31.5		28.0	
		80	SFR 40 - 080	2.05	40.0		36.0		32.0	
		90	SFR 40 - 090	1.80	45.0		40.5		36.0	
		100	SFR 40 - 100	1.50	50.0		45.0		40.0	
		125	SFR 40 - 125	1.15	62.5		56.25		50.0	
		150	SFR 40 - 150	0.90	75.0		67.5		60.0	
		175	SFR 40 - 175	0.75	87.5		78.75		70.0	
		200	SFR 40 - 200	0.60	100.0		90.0		80.0	
		250	SFR 40 - 250	0.40	125.0		112.5		100.0	
50	27.5	50	SF 50 - 050	8.00	25.0	200 (1,961)	22.5	180 (1,765)	20.0	160 (1,569)
		60	SF 50 - 060	6.66	30.0		27.0		24.0	
		70	SF 50 - 070	5.71	35.0		31.5		28.0	
		80	SF 50 - 080	5.00	40.0		36.0		32.0	
		90	SF 50 - 090	4.44	45.0		40.5		36.0	
		100	SF 50 - 100	4.00	50.0		45.0		40.0	
		125	SF 50 - 125	3.20	62.5		56.2		50.0	
		150	SF 50 - 150	2.66	75.0		67.5		60.0	
		175	SF 50 - 175	2.28	87.5		78.7		70.0	
		200	SF 50 - 200	2.00	100.0		90.0		80.0	
		250	SF 50 - 250	1.60	125.0		112.5		100.0	
		300	SF 50 - 300	1.33	150.0		135.0		120.0	
50	31	50	SFR 50 - 050	5.40	25.0	123.3 (1,212.3)	22.5	111.4 (1,091.4)	20.0	99 (970.2)
		60	SFR 50 - 060	4.50	30.0		27.0		24.0	
		70	SFR 50 - 070	3.60	35.0		31.5		28.0	
		80	SFR 50 - 080	3.00	40.0		36.0		32.0	
		90	SFR 50 - 090	2.65	45.0		40.5		36.0	
		100	SFR 50 - 100	2.40	50.0		45.0		40.0	
		125	SFR 50 - 125	1.90	62.5		56.25		50.0	
		150	SFR 50 - 150	1.55	75.0		67.5		60.0	
		175	SFR 50 - 175	1.30	87.5		78.75		70.0	
		200	SFR 50 - 200	1.10	100.0		90.0		80.0	
		250	SFR 50 - 250	0.90	125.0		112.5		100.0	
		300	SFR 50 - 300	0.75	150.0		135.0		120.0	
60	33	60	SF 60 - 060	9.59	30.0	288 (2,820)	27.0	259 (2,540)	24.0	230 (2,260)
		70	SF 60 - 070	8.22	35.0		31.5		28.0	
		80	SF 60 - 080	7.19	40.0		36.0		32.0	
		90	SF 60 - 090	6.40	45.0		40.5		36.0	
		100	SF 60 - 100	5.76	50.0		45.0		40.0	
		125	SF 60 - 125	4.60	62.5		56.2		50.0	
		150	SF 60 - 150	3.84	75.0		67.5		60.0	
		175	SF 60 - 175	3.29	87.5		78.7		70.0	
		200	SF 60 - 200	2.88	100.0		90.0		80.0	
		250	SF 60 - 250	2.30	125.0		112.5		100.0	
		300	SF 60 - 300	1.92	150.0		135.0		120.0	
		60	36	60	SFR 60 - 060		7.40		30.0	
70	SFR 60 - 070			6.30	35.0	31.5	28.0			
80	SFR 60 - 080			5.30	40.0	36.0	32.0			
90	SFR 60 - 090			4.20	45.0	40.5	36.0			
100	SFR 60 - 100			3.10	50.0	45.0	40.0			
125	SFR 60 - 125			2.35	62.5	56.25	50.0			
150	SFR 60 - 150			2.10	75.0	67.5	60.0			
175	SFR 60 - 175			1.90	87.5	78.75	70.0			
200	SFR 60 - 200			1.60	100.0	90.0	80.0			
250	SFR 60 - 250			1.30	125.0	112.5	100.0			
300	SFR 60 - 300			1.00	150.0	135.0	120.0			

