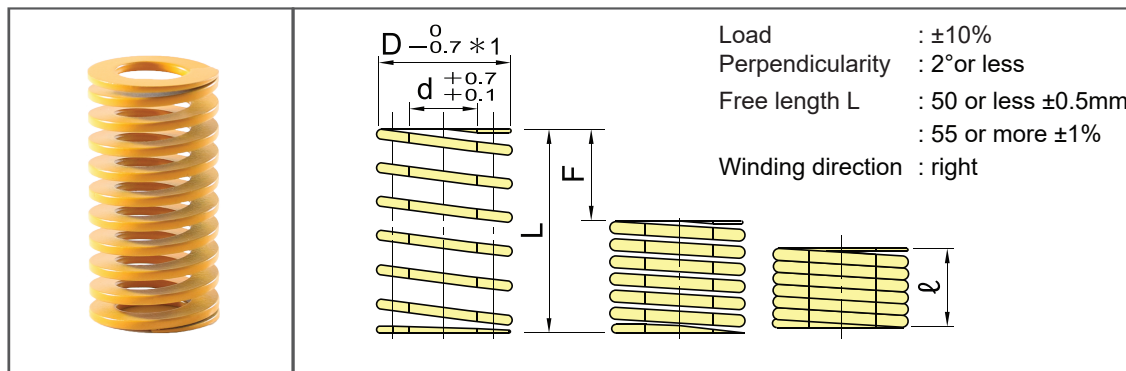




Model	Outer Dia D (mm)	Inner Dia d (mm)	Free Length L (mm)	Spring Const (kgf/mm)	0.3 million		0.5 million		1 million	
					Deflection F (mm)	Load kgf(N)	Deflection F (mm)	Load kgf(N)	Deflection F (mm)	Load kgf(N)
TF 8 × 10	8	4	10	1.56	5.0	8	4.5	7	4.0	6
15			15	1.04	7.5		6.8		6.0	
20			20	0.78	10.0		9.0		8.0	
25			25	0.62	12.5		11.2		10.0	
30			30	0.52	15.0		13.5		12.0	
35			35	0.44	17.5		15.7		14.0	
40			40	0.39	20.0		18.0		16.0	
45			45	0.35	22.5		20.2		18.0	
50			50	0.31	25.0		22.5		20.0	
55			55	0.28	27.5		24.7		22.0	
60			60	0.26	30.0		27.0		24.0	
65			65	0.24	32.5		29.2		26.0	
70			70	0.22	35.0		31.5		28.0	
75			75	0.21	37.5		33.7		30.0	
80			80	0.20	40.0		36.0		32.0	
90			90	0.17	45.0		40.5		36.0	
TF 10 × 10	10	5	10	2.00	5.0	10	4.5	9	4.0	8
15			15	1.32	7.5		6.8		6.0	
20			20	1.00	10.0		9.0		8.0	
25			25	0.80	12.5		11.2		10.0	
30			30	0.67	15.0		13.5		12.0	
35			35	0.57	17.5		15.7		14.0	
40			40	0.50	20.0		18.0		16.0	
45			45	0.44	22.5		20.2		18.0	
50			50	0.40	25.0		22.5		20.0	
55			55	0.36	27.5		24.7		22.0	
60			60	0.33	30.0		27.0		24.0	
65			65	0.31	32.5		29.2		26.0	
70			70	0.29	35.0		31.5		28.0	
75			75	0.27	37.5		33.7		30.0	
80			80	0.25	40.0		36.0		32.0	
90			90	0.22	45.0		40.5		36.0	
100			100	0.20	50.0		45.0		40.0	

Model	Outer Dia D (mm)	Inner Dia d (mm)	Free Length L (mm)	Spring Const (kgf/mm)	0.3 million		0.5 million		1 million	
					Deflection F (mm)	Load kgf(N)	Deflection F (mm)	Load kgf(N)	Deflection F (mm)	Load kgf(N)
TF 12 × 20	12	6	20	1.40	10.0	14	9.0	12.5	8.0	11
25			25	1.12	12.5		11.2		10.0	
30			30	0.93	15.0		13.5		12.0	
35			35	0.80	17.5		15.7		14.0	
40			40	0.70	20.0		18.0		16.0	
45			45	0.62	22.5		20.2		18.0	
50			50	0.56	25.0		22.5		20.0	
55			55	0.51	27.5		24.7		22.0	
60			60	0.47	30.0		27.0		24.0	
65			65	0.43	32.5		29.2		26.0	
70			70	0.40	35.0		31.5		28.0	
75			75	0.37	37.5		33.7		30.0	
80			80	0.35	40.0		36.0		32.0	
90			90	0.31	45.0		40.5		36.0	
100			100	0.28	50.0		45.0		40.0	
TF 14 × 20	14	7	20	1.78	10.0	18	9.0	16	8.0	14.5
25			25	1.44	12.5		11.2		10.0	
30			30	1.20	15.0		13.5		12.0	
35			35	1.03	17.5		15.7		14.0	
40			40	0.90	20.0		18.0		16.0	
45			45	0.80	22.5		20.2		18.0	
50			50	0.72	25.0		22.5		20.0	
55			55	0.65	27.5		24.7		22.0	
60			60	0.60	30.0		27.0		24.0	
65			65	0.55	32.5		29.2		26.0	
70			70	0.51	35.0		31.5		28.0	
75			75	0.48	37.5		33.7		30.0	
80			80	0.45	40.0		36.0		32.0	
90			90	0.40	45.0		40.5		36.0	
100			100	0.36	50.0		45.0		40.0	
125			125	0.29	62.5		56.2		50.0	
TF 16 × 20	16	8	20	2.11	10.0	21	9.0	19	8.0	17
25			25	1.68	12.5		11.2		10.0	
30			30	1.40	15.0		13.5		12.0	
35			35	1.20	17.5		15.7		14.0	
40			40	1.05	20.0		18.0		16.0	
45			45	0.94	22.5		20.2		18.0	
50			50	0.84	25.0		22.5		20.0	
55			55	0.77	27.5		24.7		22.0	
60			60	0.70	30.0		27.0		24.0	
65			65	0.65	32.5		29.2		26.0	
70			70	0.60	35.0		31.5		28.0	
75			75	0.56	37.5		33.7		30.0	
80			80	0.53	40.0		36.0		32.0	
90			90	0.47	45.0		40.5		36.0	
100			100	0.42	50.0		45.0		40.0	
125			125	0.34	62.5		56.2		50.0	

Model	Outer Dia D (mm)	Inner Dia d (mm)	Free Length L (mm)	Spring Const (kgf/mm)	0.3 million		0.5 million		1 million	
					Deflection F (mm)	Load kgf(N)	Deflection F (mm)	Load kgf(N)	Deflection F (mm)	Load kgf(N)
TF 18 × 20	18	9	20	2.56	10.0	26	9.0	23	8.0	21
25			25	2.08	12.5		11.2		10.0	
30			30	1.74	15.0		13.5		12.0	
35			35	1.49	17.5		15.7		14.0	
40			40	1.30	20.0		18.0		16.0	
45			45	1.16	22.5		20.2		18.0	
50			50	1.04	25.0		22.5		20.0	
55			55	0.95	27.5		24.7		22.0	
60			60	0.87	30.0		27.0		24.0	
65			65	0.80	32.5		29.2		26.0	
70			70	0.74	35.0		31.5		28.0	
75			75	0.70	37.5		33.7		30.0	
80			80	0.65	40.0		36.0		32.0	
90			90	0.58	45.0		40.5		36.0	
100			100	0.52	50.0		45.0		40.0	
125			125	0.42	62.5		56.2		50.0	
TF 20 × 20	20	11	20	3.22	10.0	32	9.0	29	8.0	26
25			25	2.56	12.5		11.2		10.0	
30			30	2.13	15.0		13.5		12.0	
35			35	1.83	17.5		15.7		14.0	
40			40	1.60	20.0		18.0		16.0	
45			45	1.42	22.5		20.2		18.0	
50			50	1.28	25.0		22.5		20.0	
55			55	1.16	27.5		24.7		22.0	
60			60	1.07	30.0		27.0		24.0	
65			65	0.98	32.5		29.2		26.0	
70			70	0.91	35.0		31.5		28.0	
75			75	0.85	37.5		33.7		30.0	
80			80	0.80	40.0		36.0		32.0	
90			90	0.71	45.0		40.5		36.0	
100			100	0.64	50.0		45.0		40.0	
125			125	0.51	62.5		56.2		50.0	
150			150	0.43	75.0		67.5		60.0	
175			175	0.37	87.5		78.7		70.0	
TF 22 × 25	22	11	25	3.20	12.5	40	11.2	36	10.0	32
30			30	2.67	15.0		13.5		12.0	
35			35	2.29	17.5		15.7		14.0	
40			40	2.00	20.0		18.0		16.0	
45			45	1.78	22.5		20.2		18.0	
50			50	1.60	25.0		22.5		20.0	
55			55	1.46	27.5		24.7		22.0	
60			60	1.33	30.0		27.0		24.0	
65			65	1.23	32.5		29.2		26.0	
70			70	1.14	35.0		31.5		28.0	
75			75	1.07	37.5		33.7		30.0	
80			80	1.00	40.0		36.0		32.0	
90			90	0.89	45.0		40.5		36.0	
100			100	0.80	50.0		45.0		40.0	
125			125	0.64	62.5		56.2		50.0	
150			150	0.53	75.0		67.5		60.0	
175			175	0.46	87.5		78.7		70.0	

Model	Outer Dia D (mm)	Inner Dia d (mm)	Free Length L (mm)	Spring Const (kgf/mm)	0.3 million		0.5 million		1 million	
					Deflection F (mm)	Load kgf(N)	Deflection F (mm)	Load kgf(N)	Deflection F (mm)	Load kgf(N)
TF 25 × 25	25	13.5	25	4.00	12.5	50	11.2	45	10.0	40
30			30	3.33	15.0		13.5		12.0	
35			35	2.85	17.5		15.7		14.0	
40			40	2.50	20.0		18.0		16.0	
45			45	2.22	22.5		20.2		18.0	
50			50	2.00	25.0		22.5		20.0	
55			55	1.82	27.5		24.7		22.0	
60			60	1.67	30.0		27.0		24.0	
65			65	1.54	32.5		29.2		26.0	
70			70	1.43	35.0		31.5		28.0	
75			75	1.33	37.5		33.7		30.0	
80			80	1.25	40.0		36.0		32.0	
90			90	1.11	45.0		40.5		36.0	
100			100	1.00	50.0		45.0		40.0	
125			125	0.80	62.5		56.2		50.0	
150			150	0.67	75.0		67.5		60.0	
175			175	0.57	87.5		78.7		70.0	
200			200	0.50	100.0		90.0		80.0	
TF 27 × 25	27	13.5	25	4.80	12.5	60	11.2	54	10.0	48
30			30	4.00	15.0		13.5		12.0	
35			35	3.43	17.5		15.7		14.0	
40			40	3.00	20.0		18.0		16.0	
45			45	2.67	22.5		20.2		18.0	
50			50	2.40	25.0		22.5		20.0	
55			55	2.18	27.5		24.7		22.0	
60			60	2.00	30.0		27.0		24.0	
65			65	1.85	32.5		29.2		26.0	
70			70	1.71	35.0		31.5		28.0	
75			75	1.60	37.5		33.7		30.0	
80			80	1.50	40.0		36.0		32.0	
90			90	1.33	45.0		40.5		36.0	
100			100	1.20	50.0		45.0		40.0	
125			125	0.96	62.5		56.2		50.0	
150			150	0.80	75.0		67.5		60.0	
175			175	0.69	87.5		78.7		70.0	
200			200	0.60	100.0		90.0		80.0	
TF 30 × 25	30	16	25	5.80	12.5	72	11.2	65	10.0	58
30			30	4.83	15.0		13.5		12.0	
35			35	4.13	17.5		15.7		14.0	
40			40	3.60	20.0		18.0		16.0	
45			45	3.21	22.5		20.2		18.0	
50			50	2.88	25.0		22.5		20.0	
55			55	2.63	27.5		24.7		22.0	
60			60	2.40	30.0		27.0		24.0	
65			65	2.22	32.5		29.2		26.0	
70			70	2.05	35.0		31.5		28.0	

Model	Outer Dia D (mm)	Inner Dia d (mm)	Free Length L (mm)	Spring Const (kgf/mm)	0.3 million		0.5 million		1 million	
					Deflection F (mm)	Load kgf(N)	Deflection F (mm)	Load kgf(N)	Deflection F (mm)	Load kgf(N)
TF 30 × 75	30	16	75	1.93	37.5	72	33.7	65	30.0	58
80			80	1.80	40.0		36.0		32.0	
90			90	1.60	45.0		40.5		36.0	
100			100	1.44	50.0		45.0		40.0	
125			125	1.15	62.5		56.2		50.0	
150			150	0.96	75.0		67.5		60.0	
175			175	0.82	87.5		78.7		70.0	
200			200	0.72	100.0		90.0		80.0	
TF 35 × 35	35	19	35	5.60	17.5	98	15.7	88	14.0	78
40			40	4.90	20.0		18.0		16.0	
45			45	4.36	22.5		20.2		18.0	
50			50	3.92	25.0		22.5		20.0	
55			55	3.56	27.5		24.7		22.0	
60			60	3.26	30.0		27.0		24.0	
65			65	3.02	32.5		29.2		26.0	
70			70	2.80	35.0		31.5		28.0	
75			75	2.61	37.5		33.7		30.0	
80			80	2.45	40.0		36.0		32.0	
90			90	2.17	45.0		40.5		36.0	
100			100	1.96	50.0		45.0		40.0	
125			125	1.57	62.5		56.2		50.0	
150			150	1.30	75.0		67.5		60.0	
175			175	1.12	87.5		78.7		70.0	
200			200	0.98	100.0		90.0		80.0	
TF 40 × 40	40	22	40	6.38	20.0	128	18.0	115	16.0	102
45			45	5.67	22.5		20.2		18.0	
50			50	5.12	25.0		22.5		20.0	
55			55	4.64	27.5		24.7		22.0	
60			60	4.26	30.0		27.0		24.0	
65			65	3.93	32.5		29.2		26.0	
70			70	3.65	35.0		31.5		28.0	
75			75	3.40	37.5		33.7		30.0	
80			80	3.20	40.0		36.0		32.0	
90			90	2.84	45.0		40.5		36.0	
100			100	2.56	50.0		45.0		40.0	
125			125	2.04	62.5		56.2		50.0	
150			150	1.70	75.0		67.5		60.0	
175			175	1.46	87.5		78.7		70.0	
200			200	1.28	100.0		90.0		80.0	
225			225	1.13	112.5		101.2		90.0	
250			250	1.02	125.0		112.5		100.0	
275			275	0.93	137.5		123.7		110.0	
300			300	0.85	150.0		135.0		120.0	
TF 50 × 50	50	27.5	50	8.00	25.0	200	22.5	180	20.0	160
55			55	7.27	27.5		24.7		22.0	
60			60	6.66	30.0		27.0		24.0	
65			65	6.15	32.5		29.2		26.0	

Model	Outer Dia D (mm)	Inner Dia d (mm)	Free Length L (mm)	Spring Const (kgf/mm)	0.3 million		0.5 million		1 million	
					Deflection F (mm)	Load kgf(N)	Deflection F (mm)	Load kgf(N)	Deflection F (mm)	Load kgf(N)
TF 50 × 70	50	27.5	70	5.71	35.0	200	31.5	180	28.0	160
75			75	5.33	37.5		33.7		30.0	
80			80	5.00	40.0		36.0		32.0	
90			90	4.44	45.0		40.5		36.0	
100			100	4.00	50.0		45.0		40.0	
125			125	3.20	62.5		56.2		50.0	
150			150	2.66	75.0		67.5		60.0	
175			175	2.28	87.5		78.7		70.0	
200			200	2.00	100.0		90.0		80.0	
225			225	1.78	112.5		101.2		90.0	
250			250	1.60	125.0		112.5		100.0	
275			275	1.45	137.5		123.7		110.0	
300			300	1.33	150.0		135.0		120.0	
350			350	1.14	175.0		157.5		140.0	
400			400	1.00	200.0		180.0		160.0	
450			450	0.89	225.0		202.5		180.0	
500			500	0.80	250.0		225.0		200.0	
TF 60 × 60	60	33	60	9.59	30.0	288	27.0	259	24.0	230
70			70	8.22	35.0		31.5		28.0	
80			80	7.19	40.0		36.0		32.0	
90			90	6.40	45.0		40.5		36.0	
100			100	5.76	50.0		45.0		40.0	
125			125	4.60	62.5		56.2		50.0	
150			150	3.84	75.0		67.5		60.0	
175			175	3.29	87.5		78.7		70.0	
200			200	2.88	100.0		90.0		80.0	
225			225	2.56	112.5		101.2		90.0	
250			250	2.30	125.0		112.5		100.0	
275			275	2.09	137.5		123.8		110.0	
300			300	1.92	150.0		135.0		120.0	
350			350	1.65	175.0		157.5		140.0	
400			400	1.44	200.0		180.0		160.0	
450			450	1.28	225.0		202.5		180.0	
500			500	1.15	250.0		225.0		200.0	
TFR 35 × 40	35	21	40	4.60	20.0	92	18.0	83	16.0	74
45			45	4.09	22.5		20.3		18.0	
50			50	3.68	25.0		22.5		20.0	
55			55	3.35	27.5		24.8		22.0	
60			60	3.07	30.0		27.0		24.0	
65			65	2.83	32.5		29.3		26.0	
70			70	2.63	35.0		31.5		28.0	
75			75	2.45	37.5		33.8		30.0	
80			80	2.30	40.0		36.0		32.0	
90			90	2.04	45.0		40.5		36.0	
100			100	1.84	50.0		45.0		40.0	
125			125	1.47	62.5		56.3		50.0	
150			150	1.23	75.0		67.5		60.0	
175			175	1.05	87.5		78.8		70.0	
200			200	0.92	100.0		90.0		80.0	

Model	Outer Dia D (mm)	Inner Dia d (mm)	Free Length L (mm)	Spring Const (kgf/mm)	0.3 million		0.5 million		1 million	
					Deflection F (mm)	Load kgf(N)	Deflection F (mm)	Load kgf(N)	Deflection F (mm)	Load kgf(N)
TFR 40 × 50	40	26	50	4.20	25.0	105	22.5	95	20.0	84
60			60	3.50	30.0		27.0		24.0	
70			70	3.00	35.0		31.5		28.0	
80			80	2.63	40.0		36.0		32.0	
90			90	2.33	45.0		40.5		36.0	
100			100	2.10	50.0		45.0		40.0	
125			125	1.68	62.5		56.3		50.0	
150			150	1.40	75.0		67.5		60.0	
175			175	1.20	87.5		78.8		70.0	
200			200	1.05	100.0		90.0		80.0	
250			250	0.84	125.0		112.5		100.0	
TFR 50 × 60	50	31	60	6.67	30.0	200	27.0	180	24.0	160
70			70	5.71	35.0		31.5		28.0	
80			80	5.00	40.0		36.0		32.0	
90			90	4.44	45.0		40.5		36.0	
100			100	4.00	50.0		45.0		40.0	
125			125	3.20	62.5		56.3		50.0	
150			150	2.67	75.0		67.5		60.0	
175			175	2.29	87.5		78.8		70.0	
200			200	2.00	100.0		90.0		80.0	
250			250	1.60	125.0		112.5		100.0	
300			300	1.33	150.0		135.0		120.0	
TFR 60 × 90	60	37	90	6.40	45.0	288	40.5	259	36.0	230
100			100	5.76	50.0		45.0		40.0	
125			125	4.61	62.5		56.3		50.0	
150			150	3.84	75.0		67.5		60.0	
175			175	3.29	87.5		78.8		70.0	
200			200	2.88	100.0		90.0		80.0	
250			250	2.30	125.0		112.5		100.0	
300			300	1.92	150.0		135.0		120.0	



Order Example

TYPE	D	L
TF	- D40	- L100