



Light load 轻负荷

Model 型号	Outside Diameter 外径 (mm)	Inside Diameter 内径 (mm)	Free length 自由长 (mm)	Spring Constant 弹簧常数		Free length × 32.0% 1,000,000 cycles 自由长 × 32.0% 100万次		Free length × 36.0% 500,000 cycles 自由长 × 36.0% 50万次		Free length × 40.0% 300,000 cycles 自由长 × 40.0% 30万次	
				(N/mm)	(kgf/mm)	Deflection 压缩量 (mm)	Load 负荷 N [kgf]	Deflection 压缩量 (mm)	Load 负荷 N [kgf]	Deflection 压缩量 (mm)	Load 负荷 N [kgf]
TL 8 × 10	8	4	10	24.53	{ 2.50 }	3.2	78.5 { 8.0 }	3.6	88.3 { 9.0 }	4.0	98.1 { 10.0 }
15			15	16.35	{ 1.67 }	4.8		5.4		6.0	
20			20	12.26	{ 1.25 }	6.4		7.2		8.0	
25			25	9.81	{ 1.00 }	8.0		9.0		10.0	
30			30	8.18	{ 0.83 }	9.6		10.8		12.0	
35			35	7.01	{ 0.71 }	11.2		12.6		14.0	
40			40	6.13	{ 0.63 }	12.8		14.4		16.0	
45			45	5.45	{ 0.56 }	14.4		16.2		18.0	
50			50	4.91	{ 0.50 }	16.0		18.0		20.0	
55			55	4.46	{ 0.45 }	17.6		19.8		22.0	
60			60	4.09	{ 0.42 }	19.2		21.6		24.0	
65			65	3.77	{ 0.38 }	20.8		23.4		26.0	
70			70	3.50	{ 0.36 }	22.4		25.2		28.0	
75			75	3.27	{ 0.33 }	24.0		27.0		30.0	
80			80	3.07	{ 0.31 }	25.6		28.8		32.0	
TL 10 × 20			10	5	20	17.71		{ 1.81 }		6.4	
25	25	14.17			{ 1.44 }	8.0	9.0	10.0			
30	30	11.81			{ 1.20 }	9.6	10.8	12.0			
35	35	10.12			{ 1.03 }	11.2	12.6	14.0			
40	40	8.85			{ 0.90 }	12.8	14.4	16.0			
45	45	7.87			{ 0.80 }	14.4	16.2	18.0			
50	50	7.08			{ 0.72 }	16.0	18.0	20.0			
55	55	6.44			{ 0.66 }	17.6	19.8	22.0			
60	60	5.90			{ 0.60 }	19.2	21.6	24.0			
65	65	5.45			{ 0.56 }	20.8	23.4	26.0			
70	70	5.06			{ 0.52 }	22.4	25.2	28.0			
75	75	4.72			{ 0.48 }	24.0	27.0	30.0			
80	80	4.43			{ 0.45 }	25.6	28.8	32.0			
90	90	3.94			{ 0.40 }	28.8	32.4	36.0			

1N = 0.102 Kgf
1N (牛顿) = 0.102 Kgf (千克)

Load (N) = Spring Constant (N/mm) × Deflection (mm)
负荷 (N) = 弹簧常数 (N/mm) × 压缩量 (mm)



Light load 轻负荷

Table of standards
轻负荷

Model 型号	Outside Diameter 外径 (mm)	Inside Diameter 内径 (mm)	Free length 自由长 (mm)	Spring Constant 弹簧常数		Free length × 32.0% 1,000,000 cycles 自由长 × 32.0% 100万次		Free length × 36.0% 500,000 cycles 自由长 × 36.0% 50万次		Free length × 40.0% 300,000 cycles 自由长 × 40.0% 30万次	
				(N/mm)	(kgf/mm)	Deflection 压缩量 (mm)	Load 负荷 N [kgf]	Deflection 压缩量 (mm)	Load 负荷 N [kgf]	Deflection 压缩量 (mm)	Load 负荷 N [kgf]
TL 12 × 20	12	6	20	25.88	{ 2.64 }	6.4	166.7 { 17.0 }	7.2	186.3 { 19.0 }	8.0	206 { 21.0 }
25			25	20.70	{ 2.11 }	8.0		9.0			
30			30	17.25	{ 1.76 }	9.6		10.8			
35			35	14.79	{ 1.51 }	11.2		12.6			
40			40	12.94	{ 1.32 }	12.8		14.4			
45			45	11.50	{ 1.17 }	14.4		16.2			
50			50	10.35	{ 1.06 }	16.0		18.0			
55			55	9.41	{ 0.96 }	17.6		19.8			
60			60	8.63	{ 0.88 }	19.2		21.6			
65			65	7.96	{ 0.81 }	20.8		23.4			
70			70	7.39	{ 0.75 }	22.4		25.2			
75			75	6.90	{ 0.70 }	24.0		27.0			
80			80	6.47	{ 0.66 }	25.6		28.8			
90			90	5.75	{ 0.59 }	28.8		32.4			
TL 14 × 25	14	7	25	27.22	{ 2.78 }	8.0	216 { 22.0 }	9.0	245 { 25.0 }	10.0	275 { 28.0 }
30			30	22.69	{ 2.31 }	9.6		10.8			
35			35	19.44	{ 1.98 }	11.2		12.6			
40			40	17.01	{ 1.73 }	12.8		14.4			
45			45	15.12	{ 1.54 }	14.4		16.2			
50			50	13.61	{ 1.39 }	16.0		18.0			
55			55	12.37	{ 1.26 }	17.6		19.8			
60			60	11.34	{ 1.16 }	19.2		21.6			
65			65	10.47	{ 1.07 }	20.8		23.4			
70			70	9.72	{ 0.99 }	22.4		25.2			
75			75	9.07	{ 0.93 }	24.0		27.0			
80			80	8.51	{ 0.87 }	25.6		28.8			
90			90	7.56	{ 0.77 }	28.8		32.4			
100			100	6.81	{ 0.69 }	32.0		36.0			
TL 16 × 25	16	8	25	34.89	{ 3.56 }	8.0	275 { 28.0 }	9.0	314 { 32.0 }	10.0	343 { 35.0 }
30			30	29.07	{ 2.96 }	9.6		10.8			
35			35	24.92	{ 2.54 }	11.2		12.6			
40			40	21.81	{ 2.22 }	12.8		14.4			
45			45	19.38	{ 1.98 }	14.4		16.2			
50			50	17.44	{ 1.78 }	16.0		18.0			
55			55	15.86	{ 1.62 }	17.6		19.8			
60			60	14.54	{ 1.48 }	19.2		21.6			
65			65	13.42	{ 1.37 }	20.8		23.4			
70			70	12.46	{ 1.27 }	22.4		25.2			
75			75	11.63	{ 1.19 }	24.0		27.0			
80			80	10.90	{ 1.11 }	25.6		28.8			
90			90	9.69	{ 0.99 }	28.8		32.4			
100			100	8.72	{ 0.89 }	32.0		36.0			
125	125	6.98	{ 0.71 }	40.0	45.0						

1N = 0.102 Kgf
1N (牛顿) = 0.102 Kgf (千克)

Load (N) = Spring Constant (N/mm) × Deflection (mm)
负荷 (N) = 弹簧常数 (N/mm) × 压缩量 (mm)



Light load 轻负荷

Model 型号	Outside Diameter 外径 (mm)	Inside Diameter 内径 (mm)	Free length 自由长 (mm)	Spring Constant 弹簧常数		Free length × 32.0% 1,000,000 cycles 自由长 × 32.0% 100万次		Free length × 36.0% 500,000 cycles 自由长 × 36.0% 50万次		Free length × 40.0% 300,000 cycles 自由长 × 40.0% 30万次	
				(N/mm)	(kgf/mm)	Deflection 压缩量 (mm)	Load 负荷 N [kgf]	Deflection 压缩量 (mm)	Load 负荷 N [kgf]	Deflection 压缩量 (mm)	Load 负荷 N [kgf]
TL 18 × 25	18	9	25	42.44	{ 4.33 }	8.0	333 { 34.0 }	9.0	382 { 39.0 }	10.0	422 { 43.0 }
30			30	35.37	{ 3.61 }	9.6		10.8			
35			35	30.32	{ 3.09 }	11.2		12.6			
40			40	26.53	{ 2.71 }	12.8		14.4			
45			45	23.58	{ 2.40 }	14.4		16.2			
50			50	21.22	{ 2.16 }	16.0		18.0			
55			55	19.29	{ 1.97 }	17.6		19.8			
60			60	17.69	{ 1.80 }	19.2		21.6			
65			65	16.32	{ 1.66 }	20.8		23.4			
70			70	15.16	{ 1.55 }	22.4		25.2			
75			75	14.15	{ 1.44 }	24.0		27.0			
80			80	13.26	{ 1.35 }	25.6		28.8			
90			90	11.79	{ 1.20 }	28.8		32.4			
100			100	10.61	{ 1.08 }	32.0		36.0			
125	125	8.49	{ 0.87 }	40.0	45.0						
TL 20 × 25	20	10	25	53.44	{ 5.45 }	8.0	422 { 43.0 }	9.0	481 { 49.0 }	10.0	530 { 54.0 }
30			30	44.54	{ 4.54 }	9.6		10.8			
35			35	38.17	{ 3.89 }	11.2		12.6			
40			40	33.40	{ 3.41 }	12.8		14.4			
45			45	29.69	{ 3.03 }	14.4		16.2			
50			50	26.72	{ 2.72 }	16.0		18.0			
55			55	24.29	{ 2.48 }	17.6		19.8			
60			60	22.27	{ 2.27 }	19.2		21.6			
65			65	20.56	{ 2.10 }	20.8		23.4			
70			70	19.09	{ 1.95 }	22.4		25.2			
75			75	17.81	{ 1.82 }	24.0		27.0			
80			80	16.70	{ 1.70 }	25.6		28.8			
90			90	14.85	{ 1.51 }	28.8		32.4			
100			100	13.36	{ 1.36 }	32.0		36.0			
125	125	10.69	{ 1.09 }	40.0	45.0						
150	150	8.91	{ 0.91 }	48.0	54.0						
TL 22 × 25	22	11	25	65.33	{ 6.66 }	8.0	530 { 54.0 }	9.0	588 { 60.0 }	10.0	657 { 67.0 }
30			30	54.44	{ 5.55 }	9.6		10.8			
35			35	46.67	{ 4.76 }	11.2		12.6			
40			40	40.83	{ 4.16 }	12.8		14.4			
45			45	36.30	{ 3.70 }	14.4		16.2			
50			50	32.67	{ 3.33 }	16.0		18.0			
55			55	29.70	{ 3.03 }	17.6		19.8			
60			60	27.22	{ 2.78 }	19.2		21.6			
65			65	25.13	{ 2.56 }	20.8		23.4			
70			70	23.33	{ 2.38 }	22.4		25.2			
75			75	21.78	{ 2.22 }	24.0		27.0			
80			80	20.42	{ 2.08 }	25.6		28.8			
90			90	18.15	{ 1.85 }	28.8		32.4			
100			100	16.33	{ 1.67 }	32.0		36.0			
125	125	13.07	{ 1.33 }	40.0	45.0						
150	150	10.89	{ 1.11 }	48.0	54.0						

1N = 0.102 Kgf
1N (牛顿) = 0.102 Kgf (千克)

Load (N) = Spring Constant (N/mm) × Deflection (mm)
负荷 (N) = 弹簧常数 (N/mm) × 压缩量 (mm)



Light load 轻负荷

Table of standards
Light load
规格标准
轻负荷

Model 型号	Outside Diameter 外径 (mm)	Inside Diameter 内径 (mm)	Free length 自由长 (mm)	Spring Constant 弹簧常数		Free length × 32.0% 1,000,000 cycles 自由长 × 32.0% 100万次		Free length × 36.0% 500,000 cycles 自由长 × 36.0% 50万次		Free length × 40.0% 300,000 cycles 自由长 × 40.0% 30万次	
				(N/mm)	(kgf/mm)	Deflection 压缩量 (mm)	Load 负荷 N [kgf]	Deflection 压缩量 (mm)	Load 负荷 N [kgf]	Deflection 压缩量 (mm)	Load 负荷 N [kgf]
TL 25 × 25	25	12.5	25	82.78	{ 8.44 }	8.0	657 { 67.0 }	9.0	745 { 76.0 }	10.0	824 { 84.0 }
30			30	68.98	{ 7.03 }	9.6		10.8		12.0	
35			35	59.13	{ 6.03 }	11.2		12.6		14.0	
40			40	51.74	{ 5.28 }	12.8		14.4		16.0	
45			45	45.99	{ 4.69 }	14.4		16.2		18.0	
50			50	41.39	{ 4.22 }	16.0		18.0		20.0	
55			55	37.63	{ 3.84 }	17.6		19.8		22.0	
60			60	34.49	{ 3.52 }	19.2		21.6		24.0	
65			65	31.84	{ 3.25 }	20.8		23.4		26.0	
70			70	29.56	{ 3.01 }	22.4		25.2		28.0	
75			75	27.59	{ 2.81 }	24.0		27.0		30.0	
80			80	25.87	{ 2.64 }	25.6		28.8		32.0	
90			90	22.99	{ 2.34 }	28.8		32.4		36.0	
100			100	20.69	{ 2.11 }	32.0		36.0		40.0	
125			125	16.56	{ 1.69 }	40.0		45.0		50.0	
150			150	13.80	{ 1.41 }	48.0		54.0		60.0	
175			175	11.83	{ 1.21 }	56.0		63.0		70.0	
200	200	10.35	{ 1.06 }	64.0	72.0	80.0					
TL 27 × 25	27	13.5	25	98.11	{ 10.00 }	8.0	785 { 80.0 }	9.0	883 { 90.0 }	10.0	981 { 100.0 }
30			30	81.76	{ 8.34 }	9.6		10.8		12.0	
35			35	70.08	{ 7.15 }	11.2		12.6		14.0	
40			40	61.32	{ 6.25 }	12.8		14.4		16.0	
45			45	54.51	{ 5.56 }	14.4		16.2		18.0	
50			50	49.06	{ 5.00 }	16.0		18.0		20.0	
55			55	44.60	{ 4.55 }	17.6		19.8		22.0	
60			60	40.88	{ 4.17 }	19.2		21.6		24.0	
65			65	37.74	{ 3.85 }	20.8		23.4		26.0	
70			70	35.04	{ 3.57 }	22.4		25.2		28.0	
75			75	32.70	{ 3.33 }	24.0		27.0		30.0	
80			80	30.66	{ 3.13 }	25.6		28.8		32.0	
90			90	27.25	{ 2.78 }	28.8		32.4		36.0	
100			100	24.53	{ 2.50 }	32.0		36.0		40.0	
125			125	19.62	{ 2.00 }	40.0		45.0		50.0	
150			150	16.35	{ 1.67 }	48.0		54.0		60.0	
175			175	14.02	{ 1.43 }	56.0		63.0		70.0	
200	200	12.26	{ 1.25 }	64.0	72.0	80.0					

1N = 0.102 Kgf
1N (牛顿) = 0.102 Kgf (千克)

Load (N) = Spring Constant (N/mm) × Deflection (mm)
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Light load 轻负荷

Model 型号	Outside Diameter 外径 (mm)	Inside Diameter 内径 (mm)	Free length 自由长 (mm)	Spring Constant 弹簧常数		Free length × 32.0% 1,000,000 cycles 自由长 × 32.0% 100万次		Free length × 36.0% 500,000 cycles 自由长 × 36.0% 50万次		Free length × 40.0% 300,000 cycles 自由长 × 40.0% 30万次	
				(N/mm)	(kgf/mm)	Deflection 压缩量 (mm)	Load 负荷 N [kgf]	Deflection 压缩量 (mm)	Load 负荷 N [kgf]	Deflection 压缩量 (mm)	Load 负荷 N [kgf]
TL 30 × 25	30	15	25	118.78	{ 12.11 }	8.0	951 { 97.0 }	9.0	1,069 { 109.0 }	10.0	1,187 { 121.0 }
30			30	98.98	{ 10.09 }	9.6		10.8			
35			35	84.84	{ 8.65 }	11.2		12.6			
40			40	74.24	{ 7.57 }	12.8		14.4			
45			45	65.99	{ 6.73 }	14.4		16.2			
50			50	59.39	{ 6.06 }	16.0		18.0			
55			55	53.99	{ 5.51 }	17.6		19.8			
60			60	49.49	{ 5.05 }	19.2		21.6			
65			65	45.68	{ 4.66 }	20.8		23.4			
70			70	42.42	{ 4.33 }	22.4		25.2			
75			75	39.59	{ 4.04 }	24.0		27.0			
80			80	37.12	{ 3.78 }	25.6		28.8			
90			90	32.99	{ 3.36 }	28.8		32.4			
100			100	29.69	{ 3.03 }	32.0		36.0			
125			125	23.76	{ 2.42 }	40.0		45.0			
150			150	19.80	{ 2.02 }	48.0		54.0			
175			175	16.97	{ 1.73 }	56.0		63.0			
200	200	14.85	{ 1.51 }	64.0	72.0						
TL 35 × 40	35	17.5	40	101.46	{ 10.35 }	12.8	1,295 { 132.1 }	14.4	1,461 { 149.0 }	16.0	1,618 { 165.0 }
45			45	90.19	{ 9.20 }	14.4		16.2			
50			50	81.17	{ 8.28 }	16.0		18.0			
55			55	73.79	{ 7.52 }	17.6		19.8			
60			60	67.64	{ 6.90 }	19.2		21.6			
65			65	62.44	{ 6.37 }	20.8		23.4			
70			70	57.98	{ 5.91 }	22.4		25.2			
75			75	54.11	{ 5.52 }	24.0		27.0			
80			80	50.73	{ 5.17 }	25.6		28.8			
90			90	45.09	{ 4.60 }	28.8		32.4			
100			100	40.58	{ 4.14 }	32.0		36.0			
125			125	32.47	{ 3.31 }	40.0		45.0			
150			150	27.06	{ 2.76 }	48.0		54.0			
175			175	23.19	{ 2.36 }	56.0		63.0			
200	200	20.29	{ 2.07 }	64.0	72.0						
TL 40 × 40	40	20	40	132.15	{ 13.48 }	12.8	1,697 { 173.0 }	14.4	1,903 { 194.1 }	16.0	2,120 { 216.2 }
45			45	117.47	{ 11.98 }	14.4		16.2			
50			50	105.72	{ 10.78 }	16.0		18.0			
55			55	96.11	{ 9.80 }	17.6		19.8			
60			60	88.10	{ 8.98 }	19.2		21.6			
65			65	81.32	{ 8.29 }	20.8		23.4			
70			70	75.52	{ 7.70 }	22.4		25.2			
75			75	70.48	{ 7.19 }	24.0		27.0			
80			80	66.08	{ 6.74 }	25.6		28.8			
90			90	58.73	{ 5.99 }	28.8		32.4			
100			100	52.86	{ 5.39 }	32.0		36.0			
125			125	42.29	{ 4.31 }	40.0		45.0			
150			150	35.24	{ 3.59 }	48.0		54.0			
175			175	30.21	{ 3.08 }	56.0		63.0			
200			200	26.43	{ 2.70 }	64.0		72.0			
225			225	23.49	{ 2.40 }	72.0		81.0			
250			250	21.14	{ 2.16 }	80.0		90.0			
275	275	19.22	{ 1.96 }	88.0	99.0						
300	300	17.62	{ 1.80 }	96.0	108.0						

1N = 0.102 Kgf
1N (牛顿) = 0.102 Kgf (千克)

Load (N) = Spring Constant (N/mm) × Deflection (mm)
负荷 (N) = 弹簧常数 (N/mm) × 压缩量 (mm)



NEW 新产品 TL70

Light load 轻负荷

Table of standards
轻负荷
TL

Model 型号	Outside Diameter 外径 (mm)	Inside Diameter 内径 (mm)	Free length 自由长 (mm)	Spring Constant 弹簧常数		Free length × 32.0% 1,000,000 cycles 自由长 × 32.0% 100万次		Free length × 36.0% 500,000 cycles 自由长 × 36.0% 50万次		Free length × 40.0% 300,000 cycles 自由长 × 40.0% 30万次	
				(N/mm)	(kgf/mm)	Deflection 压缩量 (mm)	Load 负荷 N [kgf]	Deflection 压缩量 (mm)	Load 负荷 N [kgf]	Deflection 压缩量 (mm)	Load 负荷 N [kgf]
TL 50 × 50	50	25	50	165.56	{16.88}	16.0	2,650 {270.2}	18.0	2,980 {303.9}	20.0	3,310 {337.5}
55			55	150.51	{15.35}	17.6		19.8		22.0	
60			60	137.96	{14.07}	19.2		21.6		24.0	
65			65	127.35	{12.99}	20.8		23.4		26.0	
70			70	118.25	{12.06}	22.4		25.2		28.0	
75			75	110.37	{11.25}	24.0		27.0		30.0	
80			80	103.47	{10.55}	25.6		28.8		32.0	
90			90	91.98	{9.38}	28.8		32.4		36.0	
100			100	82.78	{8.44}	32.0		36.0		40.0	
125			125	66.22	{6.75}	40.0		45.0		50.0	
150			150	55.19	{5.63}	48.0		54.0		60.0	
175			175	47.30	{4.82}	56.0		63.0		70.0	
200			200	41.39	{4.22}	64.0		72.0		80.0	
225			225	36.79	{3.75}	72.0		81.0		90.0	
250			250	33.11	{3.38}	80.0		90.0		100.0	
275			275	30.10	{3.07}	88.0		99.0		110.0	
300			300	27.59	{2.81}	96.0		108.0		120.0	
350			350	23.65	{2.41}	112.0		126.0		140.0	
400			400	20.69	{2.11}	128.0		144.0		160.0	
450			450	18.40	{1.88}	144.0		162.0		180.0	
500	500	16.56	{1.69}	160.0	180.0	200.0					
TL 60 × 60	60	30	60	198.61	{20.25}	19.2	3,810 {388.5}	21.6	4,290 {437.5}	24.0	4,770 {486.4}
70			70	170.24	{17.36}	22.4		25.2		28.0	
80			80	148.96	{15.19}	25.6		28.8		32.0	
90			90	132.41	{13.50}	28.8		32.4		36.0	
100			100	119.17	{12.15}	32.0		36.0		40.0	
125			125	95.33	{9.72}	40.0		45.0		50.0	
150			150	79.44	{8.10}	48.0		54.0		60.0	
175			175	68.10	{6.94}	56.0		63.0		70.0	
200			200	59.58	{6.08}	64.0		72.0		80.0	
225			225	52.96	{5.40}	72.0		81.0		90.0	
250			250	47.67	{4.86}	80.0		90.0		100.0	
275			275	43.33	{4.42}	88.0		99.0		110.0	
300			300	39.72	{4.05}	96.0		108.0		120.0	
350			350	34.05	{3.47}	112.0		126.0		140.0	
400			400	29.79	{3.04}	128.0		144.0		160.0	
450			450	26.48	{2.70}	144.0		162.0		180.0	
500	500	23.83	{2.43}	160.0	180.0	200.0					
TL 70 × 70	70	38.5	70	217.86	{22.22}	22.4	4,880 {497.6}	25.2	5,490 {559.8}	28.0	6,100 {622.0}
80			80	190.63	{19.44}	25.6		28.8		32.0	
90			90	169.44	{17.28}	28.8		32.4		36.0	
100			100	152.50	{15.55}	32.0		36.0		40.0	
125			125	122.00	{12.44}	40.0		45.0		50.0	
150			150	101.67	{10.37}	48.0		54.0		60.0	
175			175	87.14	{8.89}	56.0		63.0		70.0	
200			200	76.25	{7.78}	64.0		72.0		80.0	
225			225	67.78	{6.91}	72.0		81.0		90.0	
250			250	61.00	{6.22}	80.0		90.0		100.0	
275			275	55.45	{5.65}	88.0		99.0		110.0	
300			300	50.83	{5.18}	96.0		108.0		120.0	
350	350	43.57	{4.44}	112.0	126.0	140.0					

1N = 0.102 Kgf
1N (牛顿) = 0.102 Kgf (千克)

Load (N) = Spring Constant (N/mm) × Deflection (mm)
负荷 (N) = 弹簧常数 (N/mm) × 压缩量 (mm)