



Warning
警告

Please adhere to the following items when using our products. Due to their condition of use, springs can scatter upon breaking and be a cause of injury.

- Please do not use TR or TY with a deflection exceeding Free length 50.0%
- Please install the spring in a slightly compressed condition (state of initial pressure).

使用时请遵守以下事项。使用方法不当，有可能因断裂弹簧的飞散等导致人身伤害。

- TR、TY 弹簧的使用压缩量不可超过自由长 × 50.0%
- 在设置弹簧时，应使弹簧在受压缩的状态（有预压的状态）下使用。

② Table of standards | 规格表

TR

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 × 40.0% 1,000,000 cycles 自由长 × 40.0% 100万次		Free length × 45.0% 500,000 cycles 自由长 × 45.0% 50万次		Free length × 50.0% 300,000 cycles 自由长 × 50.0% 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]
TR 14.5 × 20	14.5	9.0	20	10.90	{ 1.11 }	8.0	88.3 { 9.0 }	9.0	98.1 { 10.0 }	10.0	107.9 { 11.0 }
25			25	8.72	{ 0.89 }	10.0		11.3			
30			30	7.27	{ 0.74 }	12.0		13.5			
35			35	6.23	{ 0.64 }	14.0		15.8			
40			40	5.45	{ 0.56 }	16.0		18.0			
45			45	4.84	{ 0.49 }	18.0		20.3			
50			50	4.36	{ 0.44 }	20.0		22.5			
55			55	3.96	{ 0.40 }	22.0		24.8			
60			60	3.63	{ 0.37 }	24.0		27.0			
65			65	3.35	{ 0.34 }	26.0		29.3			
70			70	3.11	{ 0.32 }	28.0		31.5			
75			75	2.91	{ 0.30 }	30.0		33.8			
80			80	2.73	{ 0.28 }	32.0		36.0			
90			90	2.42	{ 0.25 }	36.0		40.5			
100			100	2.18	{ 0.22 }	40.0		45.0			
125	125	1.74	{ 0.18 }	50.0	56.3						
TR 17 × 25	17.0	11.0	25	14.82	{ 1.51 }	10.0	147.1 { 15.0 }	11.3	166.7 { 17.0 }	12.5	186.3 { 19.0 }
30			30	12.35	{ 1.26 }	12.0		13.5			
35			35	10.58	{ 1.08 }	14.0		15.8			
40			40	9.26	{ 0.94 }	16.0		18.0			
45			45	8.23	{ 0.84 }	18.0		20.3			
50			50	7.41	{ 0.76 }	20.0		22.5			
55			55	6.74	{ 0.69 }	22.0		24.8			
60			60	6.17	{ 0.63 }	24.0		27.0			
65			65	5.70	{ 0.58 }	26.0		29.3			
70			70	5.29	{ 0.54 }	28.0		31.5			
75			75	4.94	{ 0.50 }	30.0		33.8			
80			80	4.63	{ 0.47 }	32.0		36.0			
90			90	4.12	{ 0.42 }	36.0		40.5			
100			100	3.70	{ 0.38 }	40.0		45.0			
125			125	2.96	{ 0.30 }	50.0		56.3			
150	150	2.47	{ 0.25 }	60.0	67.5						

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)

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 × 40.0% 1,000,000 cycles 自由长 × 40.0% 100万次		Free length × 45.0% 500,000 cycles 自由长 × 45.0% 50万次		Free length × 50.0% 300,000 cycles 自由长 × 50.0% 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]
TR 21 × 30	21.0	13.0	30	13.80	{ 1.41 }	12.0	166.7 {17.0}	13.5	186.3 {19.0}	15.0	205.9 {21.0}
35			35	11.83	{ 1.21 }	14.0		15.8		17.5	
40			40	10.35	{ 1.06 }	16.0		18.0		20.0	
45			45	9.20	{ 0.94 }	18.0		20.3		22.5	
50			50	8.28	{ 0.84 }	20.0		22.5		25.0	
55			55	7.53	{ 0.77 }	22.0		24.8		27.5	
60			60	6.90	{ 0.70 }	24.0		27.0		30.0	
65			65	6.37	{ 0.65 }	26.0		29.3		32.5	
70			70	5.91	{ 0.60 }	28.0		31.5		35.0	
75			75	5.52	{ 0.56 }	30.0		33.8		37.5	
80			80	5.18	{ 0.53 }	32.0		36.0		40.0	
90			90	4.60	{ 0.47 }	36.0		40.5		45.0	
100			100	4.14	{ 0.42 }	40.0		45.0		50.0	
125			125	3.31	{ 0.34 }	50.0		56.3		62.5	
150			150	2.76	{ 0.28 }	60.0		67.5		75.0	
TR 26 × 30	26.0	16.5	30	26.87	{ 2.74 }	12.0	323.6 {33.0}	13.5	362.8 {37.0}	15.0	402.1 {41.0}
35			35	23.03	{ 2.35 }	14.0		15.8		17.5	
40			40	20.16	{ 2.06 }	16.0		18.0		20.0	
45			45	17.92	{ 1.83 }	18.0		20.3		22.5	
50			50	16.12	{ 1.64 }	20.0		22.5		25.0	
55			55	14.66	{ 1.49 }	22.0		24.8		27.5	
60			60	13.44	{ 1.37 }	24.0		27.0		30.0	
65			65	12.40	{ 1.26 }	26.0		29.3		32.5	
70			70	11.52	{ 1.17 }	28.0		31.5		35.0	
75			75	10.75	{ 1.10 }	30.0		33.8		37.5	
80			80	10.08	{ 1.03 }	32.0		36.0		40.0	
90			90	8.96	{ 0.91 }	36.0		40.5		45.0	
100			100	8.06	{ 0.82 }	40.0		45.0		50.0	
110			110	7.33	{ 0.75 }	44.0		49.5		55.0	
125			125	6.45	{ 0.66 }	50.0		56.3		62.5	
150			150	5.37	{ 0.55 }	60.0		67.5		75.0	
175			175	4.61	{ 0.47 }	70.0		78.8		87.5	
200	200	4.03	{ 0.41 }	80.0	90.0	100.0					
TR 32 × 40	32.0	21.0	40	25.06	{ 2.56 }	16.0	402.1 {41.0}	18.0	451.1 {46.0}	20.0	500.1 {51.0}
45			45	22.28	{ 2.27 }	18.0		20.3		22.5	
50			50	20.05	{ 2.04 }	20.0		22.5		25.0	
60			60	16.71	{ 1.70 }	24.0		27.0		30.0	
70			70	14.32	{ 1.46 }	28.0		31.5		35.0	
80			80	12.53	{ 1.28 }	32.0		36.0		40.0	
90			90	11.14	{ 1.14 }	36.0		40.5		45.0	
100			100	10.02	{ 1.02 }	40.0		45.0		50.0	
110			110	9.11	{ 0.93 }	44.0		49.5		55.0	
125			125	8.02	{ 0.82 }	50.0		56.3		62.5	
150			150	6.68	{ 0.68 }	60.0		67.5		75.0	
175			175	5.73	{ 0.58 }	70.0		78.8		87.5	
200			200	5.01	{ 0.51 }	80.0		90.0		100.0	
250			250	4.01	{ 0.41 }	100.0		112.5		125.0	
300			300	3.34	{ 0.34 }	120.0		135.0		150.0	

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				(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]
TR 39 × 40	39.0	26.0	40	27.24	{ 2.78 }	16.0	431.5 {44.0}	18.0	490.3 {50.0}	20.0	539.4 {55.0}
45			45	24.21	{ 2.47 }	18.0		20.3		22.5	
50			50	21.79	{ 2.22 }	20.0		22.5		25.0	
60			60	18.16	{ 1.85 }	24.0		27.0		30.0	
70			70	15.57	{ 1.59 }	28.0		31.5		35.0	
80			80	13.62	{ 1.39 }	32.0		36.0		40.0	
90			90	12.11	{ 1.23 }	36.0		40.5		45.0	
100			100	10.90	{ 1.11 }	40.0		45.0		50.0	
110			110	9.91	{ 1.01 }	44.0		49.5		55.0	
125			125	8.72	{ 0.89 }	50.0		56.3		62.5	
150			150	7.26	{ 0.74 }	60.0		67.5		75.0	
175			175	6.23	{ 0.63 }	70.0		78.8		87.5	
200			200	5.45	{ 0.56 }	80.0		90.0		100.0	
250			250	4.36	{ 0.44 }	100.0		112.5		125.0	
300			300	3.63	{ 0.37 }	120.0		135.0		150.0	
TR 46 × 50	46.0	32.0	50	24.41	{ 2.49 }	20.0	490.3 {50.0}	22.5	549.2 {56.0}	25.0	608.0 {62.0}
60			60	20.34	{ 2.07 }	24.0		27.0		30.0	
70			70	17.43	{ 1.78 }	28.0		31.5		35.0	
80			80	15.26	{ 1.56 }	32.0		36.0		40.0	
90			90	13.56	{ 1.38 }	36.0		40.5		45.0	
100			100	12.20	{ 1.24 }	40.0		45.0		50.0	
110			110	11.09	{ 1.13 }	44.0		49.5		55.0	
125			125	9.76	{ 1.00 }	50.0		56.3		62.5	
150			150	8.14	{ 0.83 }	60.0		67.5		75.0	
175			175	6.97	{ 0.71 }	70.0		78.8		87.5	
200			200	6.10	{ 0.62 }	80.0		90.0		100.0	
250			250	4.88	{ 0.50 }	100.0		112.5		125.0	
300			300	4.07	{ 0.41 }	120.0		135.0		150.0	

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