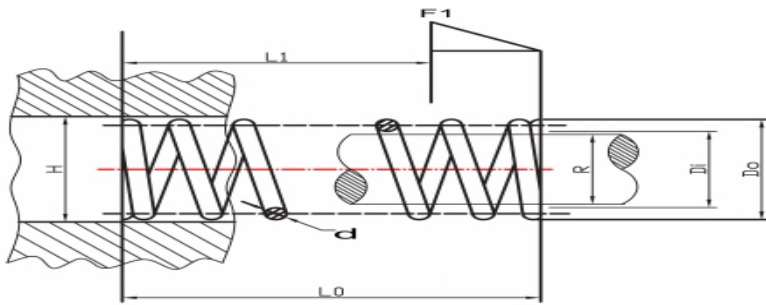


# Compression spring R series

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## Technical conditions

### 1. Material

SWPB JIS G 3522  
Stainless steel JIS G 4314

### 2. Rotation: Right-handed

### 3. End face form:

$d < 1.0\text{mm}$ , the end is closed without grinding  
 $d \geq 1.0\text{mm}$ , the end is closed and ground flat

### 4. Surface treatment:

SWPB anti-rust oil  
Stainless steel -

### 5. Tolerance: GB1239 standard

## Number resolution

H M 250 1250 F

① ② ③ ④ ⑤

① H: For holes R: For rods

② M: SWPB S: SUS304

③ 250: 25mm, aperture or rod diameter size

④ 1250: free length 125mm

⑤ F: load class F: lighter L: light M: medium H: heavy  
B: overweight

Rod Dia. (mm)	Outer Dia. (mm)	Free length (mm)	Wire Dia. (mm)	Inner Dia. (mm)	spring rate (mm)	Solid height (mm)
R	Do	Lo	d	Di	N/mm	LS
2	2.20	4	0.2	2.6	0.574	1
			0.25	2.7	1.316	1.25
			0.3	2.8	2.569	1.5
			0.45	3.1	10.921	2.25
			0.55	3.3	21.808	2.75
		6	0.2	2.6	0.287	1.4
			0.25	2.7	0.658	1.75
			0.3	2.8	1.285	2.1
			0.45	3.1	5.461	3.15
			0.55	3.3	10.904	3.85
		8	0.2	2.6	0.191	1.8
			0.25	2.7	0.439	2.25
			0.3	2.8	0.856	2.7
			0.45	3.1	3.64	4.05
			0.55	3.3	7.269	4.95
		10	0.2	2.6	0.143	2.2
			0.25	2.7	0.329	2.75
			0.3	2.8	0.642	3.3
			0.45	3.1	2.73	4.95
			0.55	3.3	5.452	6.05
12	0.2	2.6	0.115	2.6		
	0.25	2.7	0.263	3.25		
	0.3	2.8	0.514	3.9		
	0.45	3.1	2.184	5.85		
	0.55	3.3	4.362	7.15		

Rod Dia. (mm)	Outer Dia. (mm)	Free length (mm)	Wire Dia. (mm)	Inner Dia. (mm)	spring rate (mm)	Solid height (mm)
R	Do	Lo	d	Di	N/mm	Ls
2.5	2.70	5	0.25	3.2	0.503	1.5
			0.3	3.3	0.991	1.8
			0.4	3.5	2.839	2.4
			0.5	3.7	6.302	3
			0.6	3.9	11.916	3.6
		7.5	0.25	3.2	0.302	2
			0.3	3.3	0.595	2.4
			0.4	3.5	1.704	3.2
			0.5	3.7	3.781	4
			0.6	3.9	7.15	4.8
		10	0.25	3.2	0.215	2.5
			0.3	3.3	0.425	3
			0.4	3.5	1.217	4
			0.5	3.7	2.701	5
			0.6	3.9	5.107	6
		12.5	0.25	3.2	0.168	3
			0.3	3.3	0.33	3.6
			0.4	3.5	0.946	4.8
			0.5	3.7	2.101	6
			0.6	3.9	3.972	7.2
15	0.25	3.2	0.137	3.5		
	0.3	3.3	0.27	4.2		
	0.4	3.5	0.774	5.6		
	0.5	3.7	1.719	7		
	0.6	3.9	3.25	8.4		
3	3.20	6	0.3	3.8	0.624	1.8
			0.35	3.9	1.108	2.1
			0.45	4.1	2.786	2.7
			0.6	4.4	7.804	3.6
			0.8	4.8	21.147	4.8
		9	0.3	3.8	0.375	2.4
			0.35	3.9	0.665	2.8
			0.45	4.1	1.672	3.6
			0.6	4.4	4.682	4.8
			0.8	4.8	12.688	6.4
		12	0.3	3.8	0.268	3
			0.35	3.9	0.475	3.5
			0.45	4.1	1.194	4.5
			0.6	4.4	3.345	6
			0.8	4.8	9.063	8
		15	0.3	3.8	0.208	3.6
			0.35	3.9	0.369	4.2
			0.45	4.1	0.929	5.4
			0.6	4.4	2.601	7.2
			0.8	4.8	7.049	9.6
18	0.3	3.8	0.17	4.2		
	0.35	3.9	0.302	4.9		
	0.45	4.1	0.76	6.3		
	0.6	4.4	2.128	8.4		
	0.8	4.8	5.767	11.2		

Rod Dia. (mm)	Outer Dia. (mm)	Free length (mm)	Wire Dia. (mm)	Inner Dia. (mm)	spring rate (mm)	Solid height (mm)
R	Do	Lo	d	Di	N/mm	Ls
3.5	3.70	7	0.35	4.4	0.746	2.1
			0.4	4.5	1.227	2.4
			0.5	4.7	2.787	3
			0.7	5.1	9.313	4.2
			0.9	5.5	22.272	5.4
		10.5	0.35	4.4	0.448	2.8
			0.4	4.5	0.736	3.2
			0.5	4.7	1.672	4
			0.7	5.1	5.588	5.6
			0.9	5.5	13.363	7.2
		14	0.35	4.4	0.32	3.5
			0.4	4.5	0.526	4
			0.5	4.7	1.195	5
			0.7	5.1	3.991	7
			0.9	5.5	9.545	9
		17.5	0.35	4.4	0.249	4.2
			0.4	4.5	0.409	4.8
			0.5	4.7	0.929	6
			0.7	5.1	3.104	8.4
			0.9	5.5	7.424	10.8
21	0.35	4.4	0.204	4.9		
	0.4	4.5	0.335	5.6		
	0.5	4.7	0.76	7		
	0.7	5.1	2.54	9.8		
	0.9	5.5	6.074	12.6		
4	4.20	8	0.38	4.96	0.717	2.28
			0.45	5.1	1.348	2.7
			0.6	5.4	3.872	3.6
			0.8	5.8	10.827	4.8
			1	6.2	23.499	5
		12	0.38	4.96	0.43	3.04
			0.45	5.1	0.809	3.6
			0.6	5.4	2.323	4.8
			0.8	5.8	6.496	6.4
			1	6.2	14.099	7
		16	0.38	4.96	0.307	3.8
			0.45	5.1	0.578	4.5
			0.6	5.4	1.659	6
			0.8	5.8	4.64	8
			1	6.2	10.071	9
		20	0.38	4.96	0.239	4.56
			0.45	5.1	0.449	5.4
			0.6	5.4	1.291	7.2
			0.8	5.8	3.609	9.6
			1	6.2	7.833	11
24	0.38	4.96	0.196	5.32		
	0.45	5.1	0.368	6.3		
	0.6	5.4	1.056	8.4		
	0.8	5.8	2.953	11.2		
	1	6.2	6.409	13		

Rod Dia. (mm)	Outer Dia. (mm)	Free length (mm)	Wire Dia. (mm)	Inner Dia. (mm)	spring rate (mm)	Solid height (mm)
R	Do	Lo	d	Di	N/mm	Ls
4.5	4.70	9	0.4	5.5	0.638	2.4
			0.5	5.7	1.469	3
			0.6	5.9	2.876	3.6
			0.9	6.5	12.344	5.4
			1.1	6.9	24.794	5.5
		13.5	0.4	5.5	0.383	3.2
			0.5	5.7	0.881	4
			0.6	5.9	1.726	4.8
			0.9	6.5	7.407	7.2
			1.1	6.9	14.876	7.7
		18	0.4	5.5	0.273	4
			0.5	5.7	0.629	5
			0.6	5.9	1.233	6
			0.9	6.5	5.29	9
			1.1	6.9	10.626	9.9
		22.5	0.4	5.5	0.213	4.8
			0.5	5.7	0.49	6
			0.6	5.9	0.959	7.2
			0.9	6.5	4.115	10.8
			1.1	6.9	8.265	12.1
27	0.4	5.5	0.174	5.6		
	0.5	5.7	0.401	7		
	0.6	5.9	0.784	8.4		
	0.9	6.5	3.367	12.6		
	1.1	6.9	6.762	14.3		
5	5.50	10	0.5	6.5	0.956	3
			0.6	6.7	1.887	3.6
			0.8	7.1	5.413	4.8
			1.1	7.7	16.827	5.5
			1.3	8.1	30.013	6.5
		15	0.5	6.5	0.574	4
			0.6	6.7	1.132	4.8
			0.8	7.1	3.248	6.4
			1.1	7.7	10.096	7.7
			1.3	8.1	18.008	9.1
		20	0.5	6.5	0.41	5
			0.6	6.7	0.809	6
			0.8	7.1	2.32	8
			1.1	7.7	7.211	9.9
			1.3	8.1	12.863	11.7
		25	0.5	6.5	0.319	6
			0.6	6.7	0.629	7.2
			0.8	7.1	1.804	9.6
			1.1	7.7	5.609	12.1
			1.3	8.1	10.004	14.3
30	0.5	6.5	0.261	7		
	0.6	6.7	0.515	8.4		
	0.8	7.1	1.476	11.2		
	1.1	7.7	4.589	14.3		
	1.3	8.1	8.185	16.9		

Rod Dia. (mm)	Outer Dia. (mm)	Free length (mm)	Wire Dia. (mm)	Inner Dia. (mm)	spring rate (mm)	Solid height (mm)
R	Do	Lo	d	Di	N/mm	Ls
6	6.50	15	0.6	7.7	0.897	4.2
			0.7	7.9	1.594	4.9
			0.9	8.3	4.012	6.3
			1.3	9.1	14.915	7.8
			1.6	9.7	30.56	9.6
		20	0.6	7.7	0.598	5.4
			0.7	7.9	1.063	6.3
			0.9	8.3	2.675	8.1
			1.3	9.1	9.943	10.4
			1.6	9.7	20.373	12.8
		25	0.6	7.7	0.479	6.3
			0.7	7.9	0.85	7.35
			0.9	8.3	2.14	9.45
			1.3	9.1	7.954	12.35
			1.6	9.7	16.298	15.2
		30	0.6	7.7	0.399	7.2
			0.7	7.9	0.708	8.4
			0.9	8.3	1.783	10.8
			1.3	9.1	6.629	14.3
			1.6	9.7	13.582	17.6
35	0.6	7.7	0.326	8.4		
	0.7	7.9	0.58	9.8		
	0.9	8.3	1.459	12.6		
	1.3	9.1	5.424	16.9		
	1.6	9.7	11.113	20.8		
7	7.50	15	0.7	8.9	1.079	4.9
			0.8	9.1	1.775	5.6
			1	9.5	4.035	6
			1.5	10.5	17.209	9
			1.8	11.1	32.342	10.8
		20	0.7	8.9	0.863	5.6
			0.8	9.1	1.42	6.4
			1	9.5	3.228	7
			1.5	10.5	13.767	10.5
			1.8	11.1	25.873	12.6
		30	0.7	8.9	0.54	7.7
			0.8	9.1	0.888	8.8
			1	9.5	2.018	10
			1.5	10.5	8.605	15
			1.8	11.1	16.171	18
		35	0.7	8.9	0.48	8.4
			0.8	9.1	0.789	9.6
			1	9.5	1.793	11
			1.5	10.5	7.649	16.5
			1.8	11.1	14.374	19.8
40	0.7	8.9	0.392	9.8		
	0.8	9.1	0.646	11.2		
	1	9.5	1.467	13		
	1.5	10.5	6.258	19.5		
	1.8	11.1	11.761	23.4		

Rod Dia. (mm)	Outer Dia. (mm)	Free length (mm)	Wire Dia. (mm)	Inner Dia. (mm)	spring rate (mm)	Solid height (mm)
R	Do	Lo	d	Di	N/mm	Ls
8	8.50	15	0.8	10.1	1.683	4.8
			0.9	10.3	2.61	5.4
			1.2	10.9	7.507	6
			1.7	11.9	26.005	8.5
			2.1	12.7	53.954	10.5
		20	0.8	10.1	1.122	6
			0.9	10.3	1.74	6.75
			1.2	10.9	5.005	7.8
			1.7	11.9	17.337	11.05
			2.1	12.7	35.969	13.65
		25	0.8	10.1	0.918	6.8
			0.9	10.3	1.424	7.65
			1.2	10.9	4.095	9
			1.7	11.9	14.185	12.75
			2.1	12.7	29.429	15.75
		30	0.8	10.1	0.721	8
			0.9	10.3	1.119	9
			1.2	10.9	3.217	10.8
			1.7	11.9	11.145	15.3
			2.1	12.7	23.123	18.9
40	0.8	10.1	0.561	9.6		
	0.9	10.3	0.87	10.8		
	1.2	10.9	2.502	13.2		
	1.7	11.9	8.668	18.7		
	2.1	12.7	17.985	23.1		
9	9.50	20	0.9	11.3	1.445	6.3
			1	11.5	2.141	6
			1.2	11.9	4.195	7.2
			1.8	13.1	18.029	10.8
			2.2	13.9	36.246	13.2
		25	0.9	11.3	1.156	7.2
			1	11.5	1.713	7
			1.2	11.9	3.356	8.4
			1.8	13.1	14.423	12.6
			2.2	13.9	28.997	15.4
		30	0.9	11.3	0.964	8.1
			1	11.5	1.427	8
			1.2	11.9	2.796	9.6
			1.8	13.1	12.02	14.4
			2.2	13.9	24.164	17.6
		40	0.9	11.3	0.723	9.9
			1	11.5	1.07	10
			1.2	11.9	2.097	12
			1.8	13.1	9.015	18
			2.2	13.9	18.123	22
50	0.9	11.3	0.578	11.7		
	1	11.5	0.856	12		
	1.2	11.9	1.678	14.4		
	1.8	13.1	7.212	21.6		
	2.2	13.9	14.498	26.4		

Rod Dia. (mm)	Outer Dia. (mm)	Free length (mm)	Wire Dia. (mm)	Inner Dia. (mm)	spring rate (mm)	Solid height (mm)
R	Do	Lo	d	Di	N/mm	Ls
10	10.50	20	1	12.5	1.862	5.5
			1.2	12.9	3.667	6.6
			1.5	13.5	8.297	8.25
			2.1	14.7	27.535	11.55
			2.6	15.7	57.57	14.3
		25	1	12.5	1.448	6.5
			1.2	12.9	2.852	7.8
			1.5	13.5	6.453	9.75
			2.1	14.7	21.416	13.65
			2.6	15.7	44.777	16.9
		30	1	12.5	1.185	7.5
			1.2	12.9	2.333	9
			1.5	13.5	5.28	11.25
			2.1	14.7	17.522	15.75
			2.6	15.7	36.635	19.5
		40	1	12.5	0.869	9.5
			1.2	12.9	1.711	11.4
			1.5	13.5	3.872	14.25
			2.1	14.7	12.85	19.95
			2.6	15.7	26.866	24.7
50	1	12.5	0.686	11.5		
	1.2	12.9	1.351	13.8		
	1.5	13.5	3.057	17.25		
	2.1	14.7	10.144	24.15		
	2.6	15.7	21.21	29.9		
12	13.00	25	1.2	15.4	2.051	6.6
			1.4	15.8	3.644	7.7
			1.8	16.6	9.171	9.9
			2.6	18.2	34.091	14.3
			3.2	19.4	69.851	17.6
		30	1.2	15.4	1.595	7.8
			1.4	15.8	2.834	9.1
			1.8	16.6	7.133	11.7
			2.6	18.2	26.515	16.9
			3.2	19.4	54.328	20.8
		40	1.2	15.4	1.196	9.6
			1.4	15.8	2.125	11.2
			1.8	16.6	5.35	14.4
			2.6	18.2	19.886	20.8
			3.2	19.4	40.746	25.6
		50	1.2	15.4	0.957	11.4
			1.4	15.8	1.7	13.3
			1.8	16.6	4.28	17.1
			2.6	18.2	15.909	24.7
			3.2	19.4	32.597	30.4
60	1.2	15.4	0.798	13.2		
	1.4	15.8	1.417	15.4		
	1.8	16.6	3.567	19.8		
	2.6	18.2	13.257	28.6		
	3.2	19.4	27.164	35.2		

Rod Dia. (mm)	Outer Dia. (mm)	Free length (mm)	Wire Dia. (mm)	Inner Dia. (mm)	spring rate (mm)	Solid height (mm)
R	Do	Lo	d	Di	N/mm	Ls
14	15.00	30	1.4	17.8	2.158	8.4
			1.6	18.2	3.55	9.6
			2	19	8.07	12
			3	21	34.418	18
			3.5	22	58.733	21
		40	1.4	17.8	1.727	9.8
			1.6	18.2	2.84	11.2
			2	19	6.456	14
			3	21	27.535	21
			3.5	22	46.986	24.5
		50	1.4	17.8	1.233	12.6
			1.6	18.2	2.029	14.4
			2	19	4.612	18
			3	21	19.668	27
			3.5	22	33.562	31.5
		60	1.4	17.8	1.079	14
			1.6	18.2	1.775	16
			2	19	4.035	20
			3	21	17.209	30
			3.5	22	29.366	35
75	1.4	17.8	0.863	16.8		
	1.6	18.2	1.42	19.2		
	2	19	3.228	24		
	3	21	13.767	36		
	3.5	22	23.493	42		
15	16.00	30	1.5	19	2.675	8.25
			1.8	19.6	5.272	9.9
			2.3	20.6	12.932	12.65
			3.2	22.4	41.958	17.6
			4	24	90.629	22
		40	1.5	19	2.081	9.75
			1.8	19.6	4.1	11.7
			2.3	20.6	10.058	14.95
			3.2	22.4	32.634	20.8
			4	24	70.489	26
		50	1.5	19	1.561	12
			1.8	19.6	3.075	14.4
			2.3	20.6	7.544	18.4
			3.2	22.4	24.475	25.6
			4	24	52.867	32
		60	1.5	19	1.248	14.25
			1.8	19.6	2.46	17.1
			2.3	20.6	6.035	21.85
			3.2	22.4	19.58	30.4
			4	24	42.293	38
75	1.5	19	0.986	17.25		
	1.8	19.6	1.942	20.7		
	2.3	20.6	4.765	26.45		
	3.2	22.4	15.458	36.8		
	4	24	33.389	46		



Rod Dia. (mm)	Outer Dia. (mm)	Free length (mm)	Wire Dia. (mm)	Inner Dia. (mm)	spring rate (mm)	Solid height (mm)
R	Do	Lo	d	Di	N/mm	Ls
16	17.00	30	1.5	20	2.642	7.5
			1.8	20.6	5.22	9
			2.4	21.8	15.014	12
			3.4	23.8	52.01	17
		40	4	25	91.336	20
			1.5	20	1.761	9.75
			1.8	20.6	3.48	11.7
			2.4	21.8	10.009	15.6
			3.4	23.8	34.673	22.1
		50	4	25	60.891	26
			1.5	20	1.441	11.25
			1.8	20.6	2.847	13.5
			2.4	21.8	8.19	18
			3.4	23.8	28.369	25.5
		60	4	25	49.82	30
			1.5	20	1.132	13.5
			1.8	20.6	2.237	16.2
			2.4	21.8	6.435	21.6
			3.4	23.8	22.29	30.6
		80	4	25	39.144	36
1.5	20		0.834	17.25		
1.8	20.6		1.648	20.7		
2.4	21.8		4.741	27.6		
3.4	23.8		16.424	39.1		
18	19.00	35	4	25	28.843	46
			1.6	22.2	2.123	8.8
			2	23	4.893	11
			2.5	24	11.132	13.75
			3.5	26	37.311	19.25
		45	4.5	28	89.487	24.75
			1.6	22.2	1.651	10.4
			2	23	3.806	13
			2.5	24	8.658	16.25
			3.5	26	29.02	22.75
		55	4.5	28	69.601	29.25
			1.6	22.2	1.351	12
			2	23	3.114	15
			2.5	24	7.084	18.75
			3.5	26	23.744	26.25
		70	4.5	28	56.946	33.75
			1.6	22.2	1.0362	14.4
			2	23	2.447	18
			2.5	24	5.566	22.5
			3.5	26	18.656	31.5
90	4.5	28	44.744	40.5		
	1.6	22.2	0.826	17.6		
	2	23	1.903	22		
	2.5	24	4.329	27.5		
	3.5	26	14.51	38.5		
			4.5	28	34.801	49.5

Rod Dia. (mm)	Outer Dia. (mm)	Free lenght (mm)	Wire Dia. (mm)	Inner Dia. (mm)	spring rate (mm)	Solid height (mm)
R	Do	Lo	d	Di	N/mm	Ls
20	21.00	40	1.9	24.8	3.073	10.45
			2.2	25.4	5.313	12.1
			3	27	16.595	16.5
			4	29	46.402	22
			5	31	100.71	27.5
		50	1.9	24.8	2.689	11.4
			2.2	25.4	4.649	13.2
			3	27	14.52	18
			4	29	40.602	24
			5	31	88.122	30
		60	1.9	24.8	2.151	13.3
			2.2	25.4	3.719	15.4
			3	27	11.616	21
			4	29	32.481	28
			5	31	70.497	35
		80	1.9	24.8	1.537	17.1
			2.2	25.4	2.657	19.8
			3	27	8.297	27
			4	29	23.201	36
			5	31	50.355	45
100	1.9	24.8	1.195	20.9		
	2.2	25.4	2.066	24.2		
	3	27	6.453	33		
	4	29	18.045	44		
	5	31	39.165	55		
22	23.00	45	2	27	2.9	11
			2.5	28	6.672	13.75
			3.2	29	16.512	17.6
			4.5	32	55.843	24.75
			5	33	80.635	27.5
		55	2	27	2.256	13
			2.5	28	5.189	16.25
			3.2	29	12.843	20.8
			4.5	32	43.433	29.25
			5	33	62.716	32.5
		70	2	27	1.692	16
			2.5	28	3.892	20
			3.2	29	9.632	25.6
			4.5	32	32.575	36
			5	33	47.037	40
		90	2	27	1.269	20
			2.5	28	2.919	25
			3.2	29	7.224	32
			4.5	32	24.431	45
			5	33	35.278	50
110	2	27	1.015	24		
	2.5	28	2.335	30		
	3.2	29	5.779	38.4		
	4.5	32	19.545	54		
	5	33	28.222	60		

Rod Dia. (mm)	Outer Dia. (mm)	Free lenth (mm)	Wire Dia. (mm)	Inner Dia. (mm)	spring rate (mm)	Solid height (mm)
R	Do	Lo	d	Di	N/mm	Ls
24	25.00	50	2.2	29.4	3.297	12.1
			2.8	30.6	8.102	15.4
			3.5	32	18.359	19.25
			4.5	34	45.238	24.75
			5	35	65.559	27.5
		60	2.2	29.4	2.564	14.3
			2.8	30.6	6.302	18.2
			3.5	32	14.279	22.75
			4.5	34	35.185	29.25
			5	35	50.99	32.5
		80	2.2	29.4	1.923	17.6
			2.8	30.6	4.726	22.4
			3.5	32	10.71	28
			4.5	34	26.389	36
			5	35	38.243	40
		100	2.2	29.4	1.442	22
			2.8	30.6	3.545	28
			3.5	32	8.032	35
			4.5	34	19.791	45
			5	35	28.682	50
120	2.2	29.4	1.154	26.4		
	2.8	30.6	2.836	33.6		
	3.5	32	6.426	42		
	4.5	34	15.833	54		
	5	35	22.946	60		
25	26.00	50	2.2	30.4	2.958	12.1
			2.8	31.6	7.287	15.4
			3.5	33	16.555	19.25
			4.5	35	40.932	24.75
			5	36	59.417	27.5
		60	2.2	30.4	2.301	14.3
			2.8	31.6	5.668	18.2
			3.5	33	12.876	22.75
			4.5	35	31.836	29.25
			5	36	46.213	32.5
		80	2.2	30.4	1.726	17.6
			2.8	31.6	4.251	22.4
			3.5	33	9.657	28
			4.5	35	23.877	36
			5	36	34.66	40
		100	2.2	30.4	1.294	22
			2.8	31.6	3.188	28
			3.5	33	7.243	35
			4.5	35	17.908	45
			5	36	25.995	50
125	2.2	30.4	1.035	26.4		
	2.8	31.6	2.551	33.6		
	3.5	33	5.794	42		
	4.5	35	14.326	54		
	5	36	20.796	60		

Rod Dia. (mm)	Outer Dia. (mm)	Free length (mm)	Wire Dia. (mm)	Inner Dia. (mm)	spring rate (mm)	Solid height (mm)
R	Do	Lo	d	Di	N/mm	Ls
26	27.00	50	2.2	31.4	2.665	12.1
			2.8	32.6	6.578	15.4
			3.5	34	14.979	19.25
			4.5	36	37.156	24.75
			5	37	54.019	27.5
		70	2.2	31.4	1.865	15.4
			2.8	32.6	4.605	19.6
			3.5	34	10.485	24.5
			4.5	36	26.009	31.5
			5	37	37.813	35
		90	2.2	31.4	1.332	19.8
			2.8	32.6	3.289	25.2
			3.5	34	7.49	31.5
			4.5	36	18.578	40.5
			5	37	27.009	45
		110	2.2	31.4	1.097	23.1
			2.8	32.6	2.709	29.4
			3.5	34	6.168	36.75
			4.5	36	15.3	47.25
			5	37	22.243	52.5
130	2.2	31.4	0.933	26.4		
	2.8	32.6	2.302	33.6		
	3.5	34	5.243	42		
	4.5	36	13.005	54		
	5	37	18.907	60		
28	29.00	60	2.5	34	3.097	15
			2.8	34.6	4.737	16.8
			3.5	36	10.833	21
			4.5	38	27.03	27
			5	39	39.406	30
		80	2.5	34	2.252	18.75
			2.8	34.6	3.445	21
			3.5	36	7.878	26.25
			4.5	38	19.658	33.75
			5	39	28.659	37.5
		100	2.5	34	1.77	22.5
			2.8	34.6	2.707	25.2
			3.5	36	6.19	31.5
			4.5	38	15.445	40.5
			5	39	22.518	45
		120	2.5	34	1.457	26.25
			2.8	34.6	2.229	29.4
			3.5	36	5.098	36.75
			4.5	38	12.72	47.25
			5	39	18.544	52.5
140	2.5	34	1.239	30		
	2.8	34.6	1.895	33.6		
	3.5	36	4.333	42		
	4.5	38	10.812	54		
	5	39	15.763	60		

Rod Dia. (mm)	Outer Dia. (mm)	Free lenth (mm)	Wire Dia. (mm)	Inner Dia. (mm)	spring rate (mm)	Solid height (mm)
R	Do	Lo	d	Di	N/mm	LS
30	31.00	60	2.5	36	2.575	15
			3	37	5.107	18
			3.5	38	9.056	21
			4	39	14.797	24
			5	41	33.197	30
		90	2.5	36	1.717	20
			3	37	3.405	24
			3.5	38	6.037	28
			4	39	9.864	32
			5	41	22.131	40
		120	2.5	36	1.287	25
			3	37	2.554	30
			3.5	38	4.528	35
			4	39	7.398	40
			5	41	16.598	50
		150	2.5	36	1.03	30
			3	37	2.043	36
			3.5	38	3.622	42
			4	39	5.919	48
			5	41	13.279	60
180	2.5	36	0.858	35		
	3	37	1.702	42		
	3.5	38	3.019	49		
	4	39	4.932	56		
	5	41	11.066	70		
32	34.00	60	3	40	3.963	18
			3.5	41	7.052	21
			4	42	11.561	24
			4.5	43	17.807	27
			5	44	26.11	30
		90	3	40	2.642	24
			3.5	41	4.701	28
			4	42	7.708	32
			4.5	43	11.871	36
			5	44	17.407	40
		120	3	40	1.981	30
			3.5	41	3.526	35
			4	42	5.781	40
			4.5	43	8.904	45
			5	44	13.055	50
		150	3	40	1.585	36
			3.5	41	2.821	42
			4	42	4.625	48
			4.5	43	7.123	54
			5	44	10.444	60
180	3	40	1.321	42		
	3.5	41	2.351	49		
	4	42	3.854	56		
	4.5	43	5.936	63		
	5	44	8.703	70		

Rod Dia. (mm)	Outer Dia. (mm)	Free lenght (mm)	Wire Dia. (mm)	Inner Dia. (mm)	spring rate (mm)	Solid height (mm)
R	Do	Lo	d	Di	N/mm	LS
35	37.00	70	3	43	30136	18
			3.5	44	5.598	21
			4	45	9.205	24
			4.5	46	14.218	27
			5	47	20.905	30
		105	3	43	2.091	24
			3.5	44	3.732	28
			4	45	6.136	32
			4.5	46	9.478	36
			5	47	13.937	40
		140	3	43	1.568	30
			3.5	44	2.799	35
			4	45	4.602	40
			4.5	46	7.109	45
			5	47	10.453	50
		175	3	43	1.255	36
			3.5	44	2.239	42
			4	45	3.682	48
			4.5	46	5.687	54
			5	47	8.362	60
210	3	43	1.045	42		
	3.5	44	1.866	49		
	4	45	3.068	56		
	4.5	46	4.739	63		
	5	47	6.968	70		
38	40.00	75	3.5	47	4.518	21
			4	48	7.447	24
			4.5	49	11.532	27
			5	50	16.997	30
			5.5	51	24.074	33
		110	3.5	47	3.012	28
			4	48	4.965	32
			4.5	49	7.688	36
			5	50	11.331	40
			5.5	51	16.049	44
		150	3.5	47	2.259	35
			4	48	3.724	40
			4.5	49	5.766	45
			5	50	8.498	50
			5.5	51	12.037	55
		190	3.5	47	1.807	42
			4	48	2.979	48
			4.5	49	4.613	54
			5	50	6.799	60
			5.5	51	9.629	66
220	3.5	47	1.506	49		
	4	48	2.482	56		
	4.5	49	3.844	63		
	5	50	5.666	70		
	5.5	51	8.025	77		

Rod Dia. (mm)	Outer Dia. (mm)	Free length (mm)	Wire Dia. (mm)	Inner Dia. (mm)	spring rate (mm)	Solid height (mm)
R	Do	Lo	d	Di	N/mm	LS
40	42.00	80	3.5	49	3.948	21
			4	50	6.518	24
			4.5	51	10.107	27
			5	52	14.918	30
			5.5	53	21.159	33
		120	3.5	49	2.632	28
			4	50	4.345	32
			4.5	51	6.738	36
			5	52	9.945	40
			5.5	53	14.106	44
		160	3.5	49	1.974	35
			4	50	3.259	40
			4.5	51	5.053	45
			5	52	7.459	50
			5.5	53	10.579	55
		200	3.5	49	1.579	42
			4	50	2.607	48
			4.5	51	4.043	54
			5	52	5.967	60
			5.5	53	8.464	66
240	3.5	49	1.263	50.75		
	4	50	2.086	58		
	4.5	51	3.234	65.25		
	5	52	4.774	72.5		
	5.5	53	6.771	79.75		
42	44.00	80	3.5	51	3.47	21
			4	52	5.736	24
			4.5	53	8.907	27
			5	54	13.165	30
			5.5	55	18.696	33
		120	3.5	51	2.313	28
			4	52	3.824	32
			4.5	53	5.938	36
			5	54	8.777	40
			5.5	55	12.464	44
		160	3.5	51	1.735	35
			4	52	2.868	40
			4.5	53	4.454	45
			5	54	6.582	50
			5.5	55	9.348	55
		200	3.5	51	1.388	42
			4	52	2.295	48
			4.5	53	3.563	54
			5	54	5.266	60
			5.5	55	7.479	66
240	3.5	51	1.157	49		
	4	52	1.912	56		
	4.5	53	2.969	63		
	5	54	4.388	70		
	5.5	55	6.232	77		

Rod Dia. (mm)	Outer Dia. (mm)	Free length (mm)	Wire Dia. (mm)	Inner Dia. (mm)	spring rate (mm)	Solid height (mm)
R	Do	Lo	d	Di	N/mm	Ls
45	47.00	90	4	55	4.782	24
			4.5	56	7.44	27
			5	57	11.015	30
			5.5	58	15.671	33
			6	59	21.573	36
		135	4	55	3.188	32
			4.5	56	4.96	36
			5	57	7.343	40
			5.5	58	10.447	44
			6	59	14.382	48
		180	4	55	2.391	40
			4.5	56	3.72	45
			5	57	5.508	50
			5.5	58	7.835	55
			6	59	10.786	60
		225	4	55	1.913	48
			4.5	56	2.976	54
			5	57	4.406	60
			5.5	58	6.268	66
			6	59	8.629	72
270	4	55	1.53	58		
	4.5	56	2.381	65.25		
	5	57	3.525	72.5		
	5.5	58	5.015	79.75		
	6	59	6.903	87		
48	50.00	100	4	58	4.029	24
			4.5	59	6.227	27
			5	60	9.309	30
			5.5	61	13.265	33
			6	62	18.288	36
		140	4	58	2.686	32
			4.5	59	4.185	36
			5	60	6.206	40
			5.5	61	8.843	44
			6	62	12.192	48
		190	4	58	2.014	40
			4.5	59	3.139	45
			5	60	4.655	50
			5.5	61	6.632	55
			6	62	9.144	60
		240	4	58	1.612	48
			4.5	59	2.511	54
			5	60	3.724	60
			5.5	61	5.306	66
			6	62	7.315	72
280	4	58	1.343	56		
	4.5	59	2.092	63		
	5	60	3.103	70		
	5.5	61	4.422	77		
	6	62	6.096	84		



Rod Dia. (mm)	Outer Dia. (mm)	Free length (mm)	Wire Dia. (mm)	Inner Dia. (mm)	spring rate (mm)	Solid height (mm)
R	Do	Lo	d	Di	N/mm	Ls
50	52.00	100	4	60	3.612	24
			4.5	61	5.634	27
			5	62	8.363	30
			5.5	63	11.928	33
			6	64	16.461	36
		150	4	60	2.408	32
			4.5	61	3.756	36
			5	62	5.576	40
			5.5	63	7.952	44
			6	64	10.974	48
		200	4	60	1.806	40
			4.5	61	2.817	45
			5	62	4.182	50
			5.5	63	5.964	55
			6	64	8.23	60
		250	4	60	1.376	50
			4.5	61	2.146	56.25
			5	62	3.186	62.5
			5.5	63	4.544	68.75
			6	64	6.271	75
300	4	60	1.156	58		
	4.5	61	1.803	65.25		
	5	62	2.676	72.5		
	5.5	63	3.817	79.75		
	6	64	5.267	87		