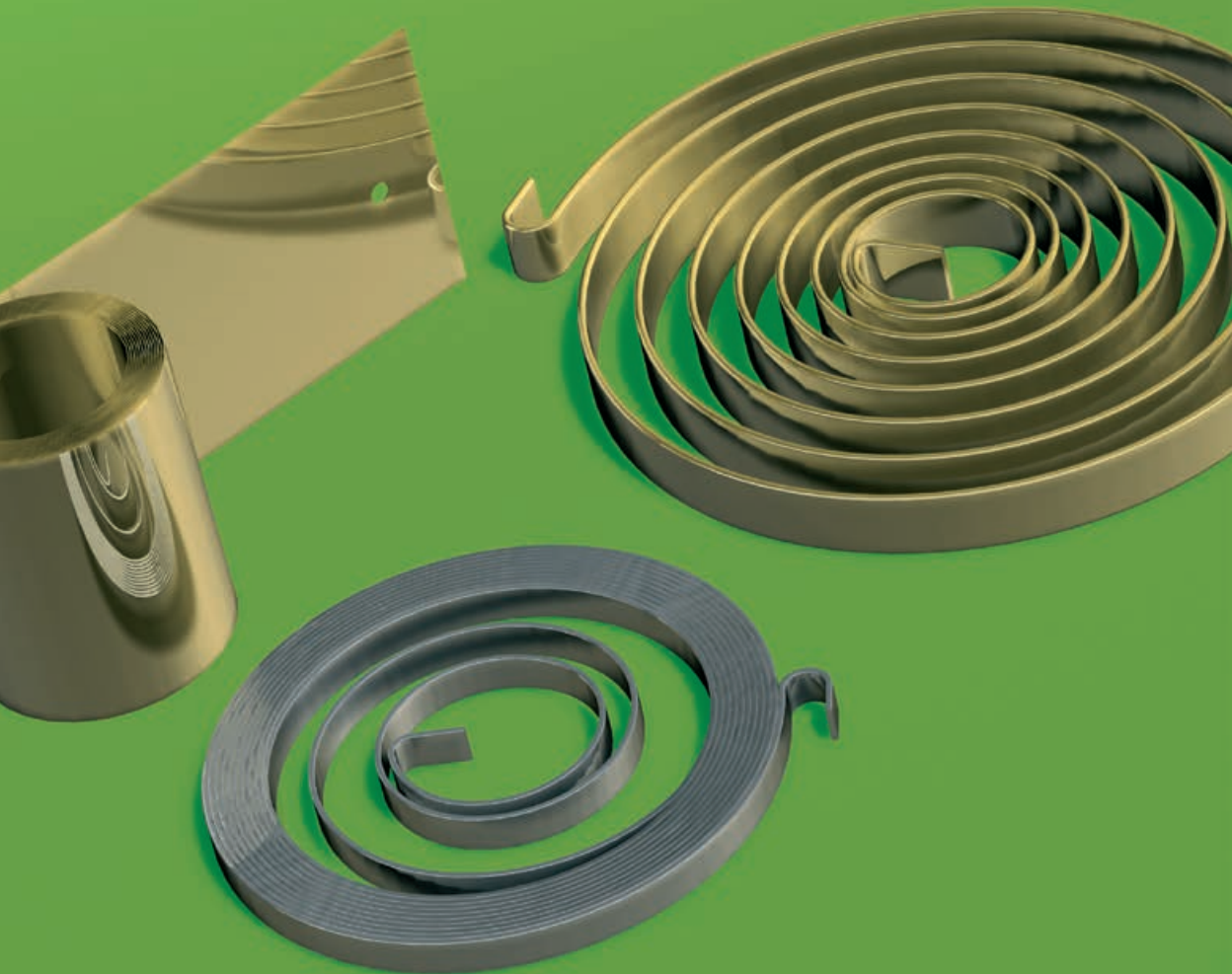


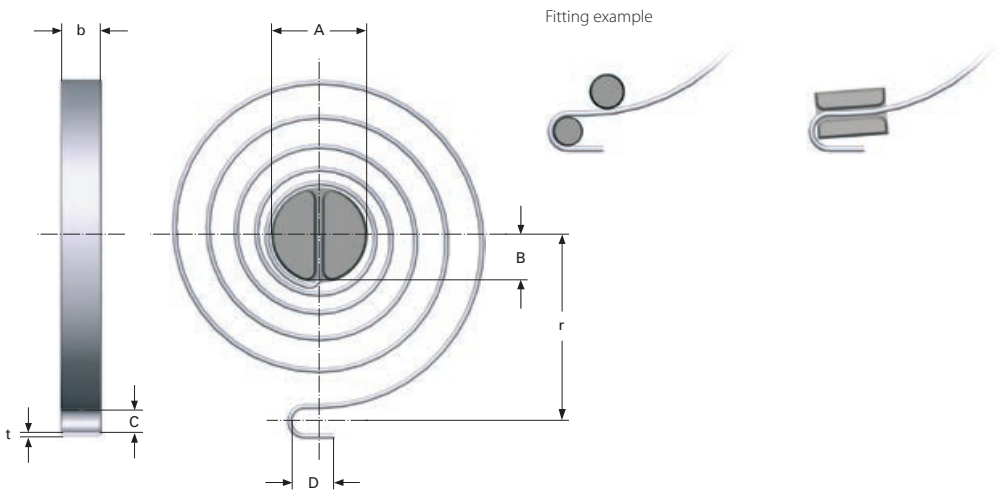
CONSTANT FORCE SPRINGS





CLOCK SPRINGS

SCS



The clock spring (also referred to as a flat torsion spring) is designed to produce a torsional force (circular movement). In contrast to the tightly coiled motor spring on the previous page, the clock spring has open coils that, when mounted correctly, reduces friction to zero. However, torque capacity is reduced as a result. The standard range is made from rounded edge stainless steel, which affords a better fatigue life.

All dimensions are in mm

- t = Material thickness
- b = Material width
- A = Shaft (recommended)
- r = Radius from spring centre to locating centre
- n = Number of coils
- φ = Torque angle at M_n
- M_n = Maximum permitted torque in Nmm
- R = Rate, Nmm per degree of torque
- N_c = Number of oscillations (life)

Material: Stainless steel EN 10270-3-1.4310

Tolerance: Tolerance for the position between inner and outer locating points is ± 10 degrees for 5 coil springs and ± 15 degrees for 8 coil springs.

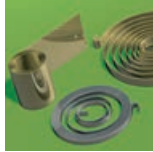
1 kp = 9.80665 Newtons, 1 Newton = 0.10197 kp

Assembly

The spring is best assembled on a grooved shaft. The end of the groove should be milled or rounded. To prevent the spring from getting an eccentric shape, leading to friction during load, the outer end should be fixed as shown in one of the above examples. Otherwise, both torque force and spring life will be compromised.

Spring life

For a static load ($N_c < 10\,000$), the highest torque angle shown in the table is recommended. The table also shows the approximative torque angle for 100 000 oscillations. If a higher N_c is required, please contact us for information about permitted torques.



t	b	A	r	n	B	C	D	R	N_c max 10 000 Torque angle at M_n	M_n Nmm	N_c max 100 000 Torque angle at M_n	M_n Nmm	Cat. no
0,5	3	7	13	5	2,5	2,7	3,5	0,56	354	198	284	158	900
0,5	5	7	13	5	2,5	2,7	3,5	0,93	354	329	284	263	901
0,5	3	7	21	8	2,5	2,7	3,5	0,26	762	198	610	158	902
0,5	5	7	21	8	2,5	2,7	3,5	0,43	762	329	610	263	903
0,6	4	8	16	5	3	3,2	4,5	0,9	416	374	332	300	904
0,6	6	8	16	5	3	3,2	4,5	1,35	416	562	332	449	905
0,6	4	8	25	8	3	3,2	4,5	0,43	862	374	690	300	906
0,6	6	8	25	8	3	3,2	4,5	0,65	862	562	690	449	907
0,7	4	10	19	5	3,5	3,7	5	1,43	354	506	283	405	908
0,7	7	10	19	5	3,5	3,7	5	2,5	354	886	283	709	909
0,7	4	10	29	8	3,5	3,7	5	0,67	761	506	609	405	910
0,7	7	10	29	8	3,5	3,7	5	1,16	761	886	609	709	911
0,8	5	12	21	5	4,5	4,2	6	1,79	456	816	364	653	912
0,8	8	12	21	5	4,5	4,2	6	2,87	456	1306	364	1044	913
0,8	5	12	34	8	4,5	4,2	6	0,83	986	816	789	653	914
0,8	8	12	34	8	4,5	4,2	6	1,32	986	1306	789	1044	915
1	6	14	25	5	5	5,2	7	4	375	1500	300	1200	916
1	10	14	25	5	5	5,2	7	6,66	375	2500	300	2000	917
1	6	14	40	8	5	5,2	7	1,86	805	1500	644	1200	918
1	10	14	40	8	5	5,2	7	3,1	805	2500	644	2000	919
1,25	7	16	28	5	6	6,3	9	7,71	340	2625	272	2100	920
1,25	12	16	28	5	6	6,3	9	13,2	340	4500	272	3600	921
1,25	7	16	42	8	6	6,3	9	3,67	716	2625	573	2100	922
1,25	12	16	42	8	6	6,3	9	6,29	716	4500	573	3600	923
1,5	10	20	33	5	7	6,3	9	16,1	336	5400	269	4320	924
1,5	15	20	33	5	7	6,3	9	24,1	336	8100	269	6480	925
1,5	10	20	52	8	7	6,3	9	7,64	706	5400	565	4320	926
1,5	15	20	52	8	7	6,3	9	11,5	706	8100	565	6480	927
2	12	24	43	5	8	8,4	12	35,9	312	11200	250	8960	928
2	20	24	43	5	8	8,4	12	59,8	312	18667	250	14933	929
2	12	24	68	8	8	8,4	12	16,9	663	11200	530	8960	930
2	20	24	68	8	8	8,4	12	28,2	663	18667	530	14933	931
2,5	15	28	48	5	10	10,4	15	79,5	265	21094	212	16875	932
2,5	25	28	48	5	10	10,4	15	132,5	265	35156	212	28125	933
2,5	15	28	76	8	10	10,4	15	34,2	617	21094	494	16875	934
2,5	25	28	76	8	10	10,4	15	57	594	33854	475	27083	935
3	18	32	60	5	12	12,5	18	139,2	262	36450	210	29160	936
3	30	32	60	5	12	12,5	18	232	262	60750	210	48600	937
3	18	32	90	8	12	12,5	18	62,8	581	36450	465	29160	938
3	30	32	90	8	12	12,5	18	104,6	581	60750	465	48600	939