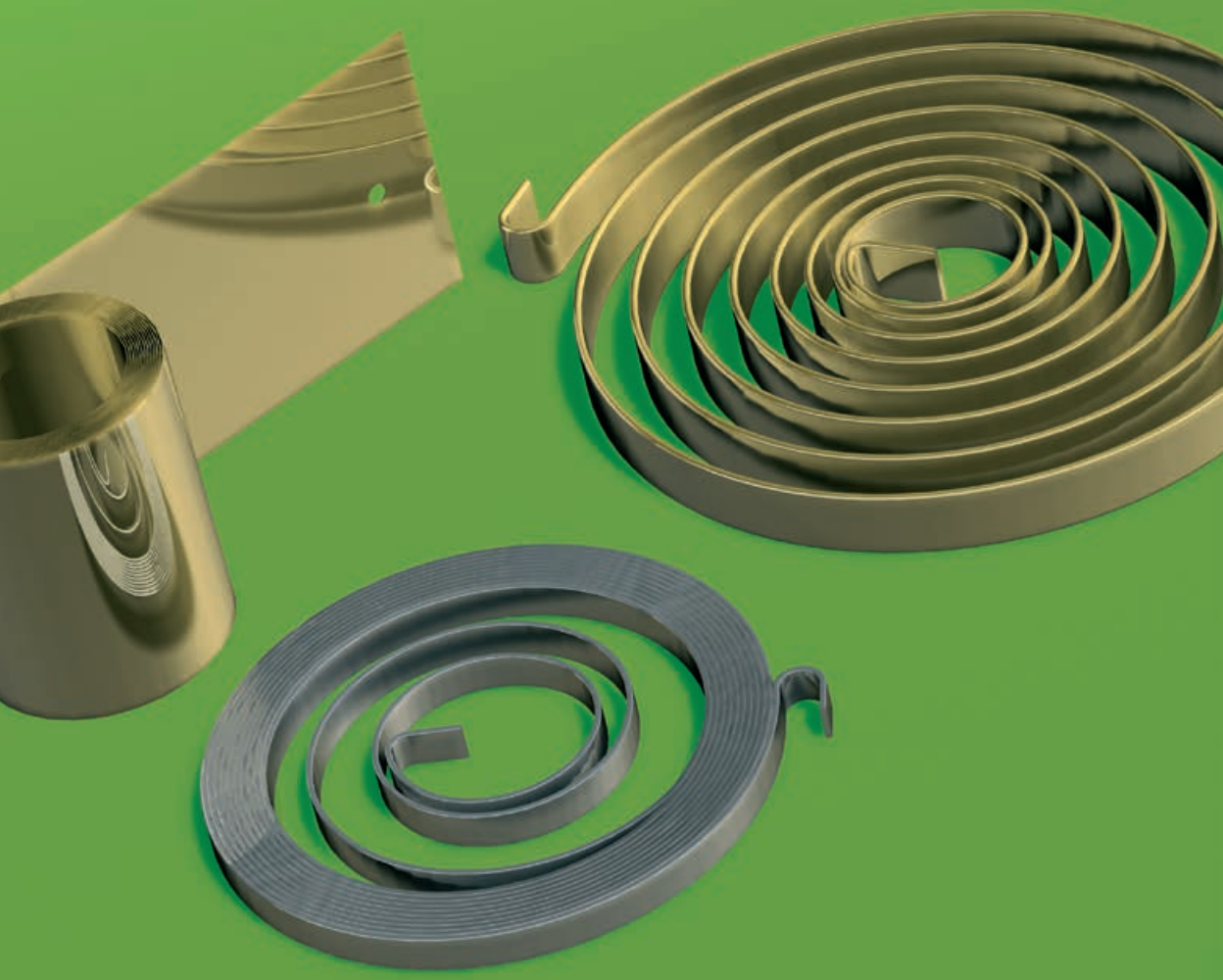
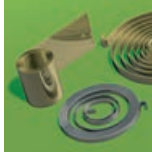
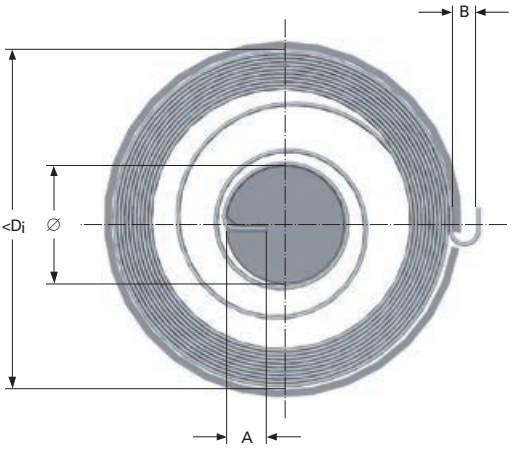
CONSTANT FORCE SPRINGS







All dimensions are in mm

t = Material thickness

b = Strip width

M_1 = Torque at 1.5 and 2.5 coils pre-tension for 10 and 20 coils respectively

M_2 = Torque at at maximum torsion 10 and 20 coils

N_C = *Original range:* up to 250 000 oscillations
Cross curved range: up to 35 000 oscillations
Not using the total torque angle (min 0.5 turns left), an increase in load cycle can be achieved with up to 100 000 oscillations, provided that lubrications is used.

D_i = Internal housing diameter

Material: Stainless steel EN 10151 1.4310

Nominal torque without effect from friction stated.

1 kp = 9.80665 Newtons, 1 Newton = 0.10197 kp

Power spring for circular motion in max 10 and 20 coils, except pre-tension as specified below. The spring is usually positioned in a housing with the outer hook located around a pin or in a slot on the housing with the smallest internal diameter as specified below. It can also be placed in a larger housing, but with an associated decrease in force. It should be positioned on a shaft with a groove in it, in accordance with the dimensions listed below. It is also possible to slightly increase the diameter of the inner coil for placement on a larger shaft.

To minimise friction, the spring should be lubricated when it is fitted and the coils separated. If no lubrication is applied, there may be a reduction in spring force of up to 20%. If more torque is required, two or more springs can be placed next to each other. In such circumstances, it is preferable to position a washer between the springs. Power springs are supplied with a protective ring or nylon band that must be removed during assembly. The spring should be handled with care and held using a suitable tool whilst it is being positioned in the housing.

POWER SPRINGS

SPS

Original range

Lesjöfors original range for normal usage, see page 103 for more details.

					10 coils				20 coils			
t	b	Shaft ∅	A	B	D_i	M_1 Nmm	M_2 Nmm	Cat.no	D_i	M_1 Nmm	M_2 Nmm	Cat.no
0,4	8	12	3	4	55	52	219	8964	77	57	219	8984
0,4	10	12	3	4	55	66	275	8965	77	72	275	8985
0,5	10	15	4	5	70	103	417	8966	97	97	417	8986
0,5	12	15	4	5	70	124	503	8967	97	117	503	8987
0,5	15	15	4	5	70	155	631	8968	97	147	631	8988
0,6	10	18	5	5	85	143	588	8969	116	127	588	8989
0,6	12	18	5	5	85	172	709	8970	116	153	709	8990
0,6	15	18	5	5	85	216	891	8971	116	192	891	8991
0,7	12	20	6	6	100	228	942	8972	136	184	942	8992
0,7	15	20	6	6	100	287	1184	8973	136	232	1184	8993
0,7	20	20	6	6	100	384	1589	8974	136	311	1589	8994
0,8	12	25	7	6	115	292	1205	8975	157	243	1205	8995
0,8	15	25	7	6	115	368	1516	8976	157	306	1516	8996
0,8	20	25	7	6	115	494	2036	8977	157	411	2036	8997
1	15	30	8	8	145	570	2312	8978	196	437	2312	8998
1	20	30	8	8	145	766	3110	8979	196	587	3110	8999
1	25	30	8	8	145	963	3907	8980	196	738	3707	9450
1,5	20	40	12	10	220	1599	6713	8981	295	1306	6713	9451
1,5	25	40	12	10	220	2014	8457	8982	295	1646	8457	9452
1,5	30	40	12	10	220	2429	10200	8983	295	1985	10200	9453

Cross-curved range

Lesjöfors cross-curved range use thinner material and achieve same properties as on our original range.
We use our own developed "cross-curved" manufacturing process to achieve a lighter spring.
See page 103 for more details.

					10 coils				20 coils			
t	b	Shaft ∅	A	B	D_i	M_1 Nmm	M_2 Nmm	Cat.no	D_i	M_1 Nmm	M_2 Nmm	Cat.no
0,28	8	12	3	4	55	90	230	61700	77	70	240	61720
0,28	10	12	3	4	55	100	270	61701	77	90	290	61721
0,34	10	15	4	5	70	160	420	61702	97	140	440	61722
0,34	12	15	4	5	70	190	500	61703	97	170	520	61723
0,34	15	15	4	5	70	240	630	61704	97	210	650	61724
0,40	10	18	5	5	85	230	600	61705	116	190	590	61725
0,40	12	18	5	5	85	280	710	61706	116	230	710	61726
0,40	15	18	5	5	85	350	890	61707	116	280	890	61727
0,47	12	20	6	6	100	360	950	61708	136	300	960	61728
0,47	15	20	6	6	100	450	1180	61709	136	370	1200	61729
0,47	20	20	6	6	100	600	1580	61710	136	500	1600	61730
0,56	12	25	7	6	115	480	1250	61711	157	400	1240	61731
0,56	15	25	7	6	115	600	1560	61712	157	490	1550	61732
0,56	20	25	7	6	115	800	2080	61713	157	660	2070	61733
0,66	15	30	8	8	145	920	2350	61714	196	740	2310	61734
0,66	20	30	8	8	145	1220	3130	61715	196	1010	3140	61735
0,66	25	30	8	8	145	1530	3920	61716	196	1210	3780	61736
0,98	20	40	12	10	220	2540	6760	61717	295	2130	6940	61737
0,98	25	40	12	10	220	3170	8450	61718	295	2660	8670	61738
0,98	30	40	12	10	220	3810	10140	61719	295	3190	10410	61739

Customized solutions
Besides our standard range we also provide customized solutions using design capabilities that feature our advanced, proprietary spring design software. We also offer performance testing that allows for rapid production of spring prototypes to help our customers achieve a competitive advantage by improving their speed-to-market.
By providing expert metallurgical knowledge with long experience in spring production, we have the expertise to optimize spring design, which will contribute to better end-product performance for our customers.

Products
Our product portfolio includes a wide variety of flat spring categories such as constant force springs, constant torque springs, clock springs, power springs, and reels. All products are designed and manufactured to each customer's unique performance and size requirements.

Applications
From small electronic and precision instrumentation springs to large industrial springs, we confidently serve engineers and buyers of OEM and replacement spring components in almost every area of apparatus and equipment manufacturing. Applications for our springs include medical, automotive, appliance, cord reels, cable reels, defense, elevator door closures, fall safety restraints, hose reels, outdoor power equipment, tool balancers, window balance systems, and other specialized retraction and counter balance systems.