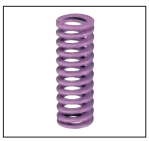
STEINEL NORMALIEN®

Springs

- System springs, system spring units
- Nitrogen gas springs
- Coil springs with round, quadratic and flat round wire gauges
- Disk springs
- Rubber and plastic springs
- Gas pressure springs
- Plastic plates and bonings

Spring elements

STEINEL NORMALIEN



SZ 8005 page 5.08

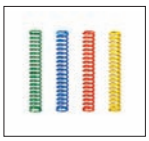
SZ 8010 page 5.10

SZ 8020 page 5.12

SZ 8030 page 5.14

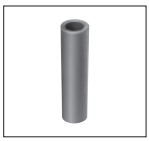
SZ 8040 page 5.16

SZ 8045 page 5.18

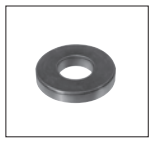


SZ 8111-14 page 5.20

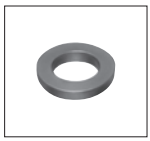
SZ 8565 page 5.22



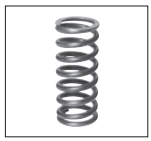
SZ 8560 page 5.24



SZ 8561 page 5.25



SZ 8563 page 5.25

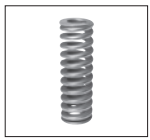


SZ 8100 page 5.26

SZ 8101 page 5.27

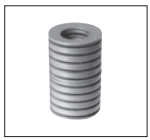
SZ 8200 page 5.28

SZ 8201 page 5.29



SZ 8400 page 5.30

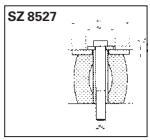
SZ 8401 page 5.31



SZ 8300 page 5.33

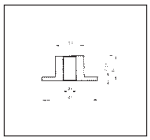
SZ 8580 page 5.37

SZ 8527

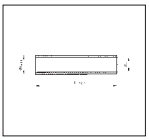


SZ 8526 page 5.38

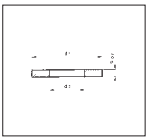
SZ 8520 page 5.39



SZ 8522 page 5.39



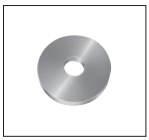
SZ 8523 page 5.39



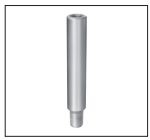
SZ 8524 page 5.39

SZ 8500 page 5.40

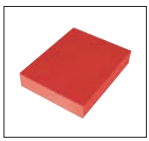
SZ 8590 page 5.42



SZ 8556 page 5.44

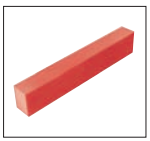


SZ 8555 page 5.45



SZ 5190 page 5.46

SZ 5381/91 page 5.47



SZ 5290 page 5.48

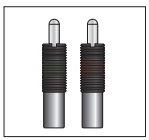
SZ 5390 page 5.48

SZ 8135 page 5.49

SZ 8460 page 5.49

SZ 8130 page 5.50

SZ 8131 page 5.50



SZ 8140/45 page 5.51

SZ 8080.1. page 5.58

SZ 7080.1. page 5.60

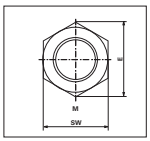
SZ 8066.1. page 5.62

SZ 7066.1. page 5.64

SZ 8065.1. page 5.66

SZ 8060.1. page 5.68

SZ 8150.1. page 5.70



SZ 8055 page 5.71

SZ 8160 page 5.71

SZ 9004 page 5.71

SZ 8080.1.REP page 5.72

SZ 7080.1.REP page 5.72

SZ 8080.1.WKZ page 5.72

SZ 7080.1.WKZ page 5.72

SZ 8065.1.REP page 5.74

SZ 7066.1.REP page 5.73

SZ 8066.1.WKZ page 5.73

SZ 7066.1.WKZ page 5.73

SZ 8066.1.REP page 5.73

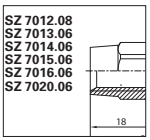
SZ 8065.1.WKZ page 5.74

SZ 8060.1.REP page 5.75

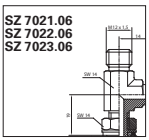
SZ 8060.1.WKZ page 5.75

SZ 8098 page 5.76

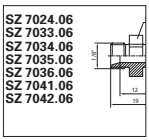
SZ 8091 page 5.77



SZ 7011.08 page 5.78

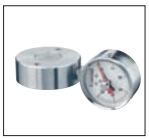


SZ 7017.06 page 5.79



SZ 7019.06 page 5.80

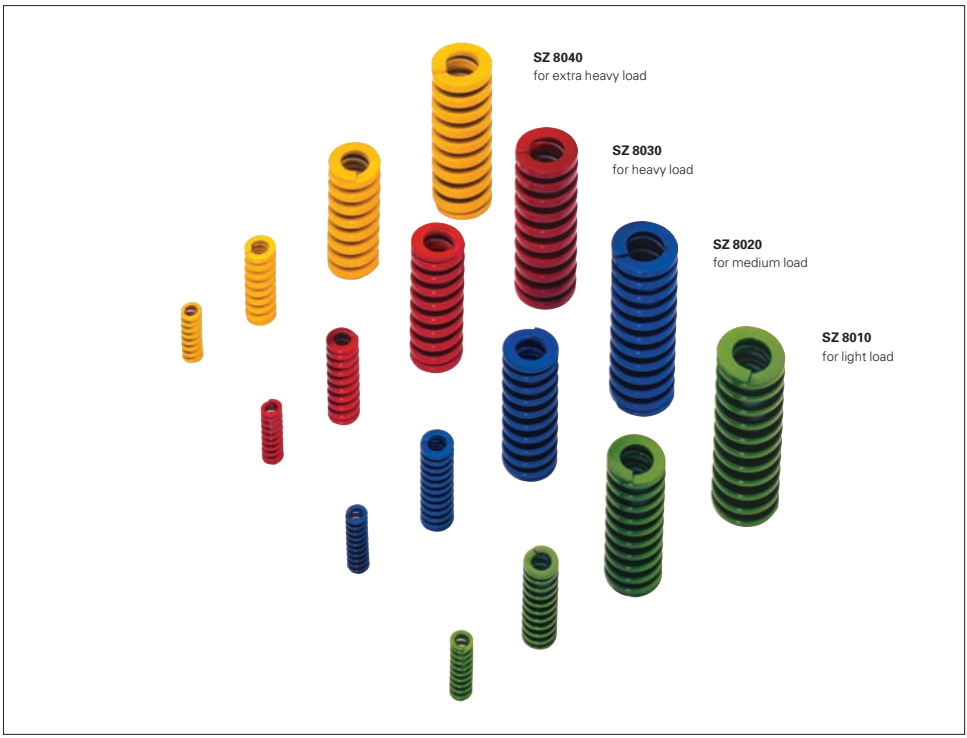
SZ 8079 page 5.81



SZ 8078 page 5.81

System springs SZ 80..

ISO 10243



Helical compression springs in four types of load
The system springs made of profiled valve-spring steel wire are available in four load types. Each of these four helical compression springs have got the same assembling dimensions, so that an increase respectively a reduction of compressive forces can ensue without an problems, also subsequently.

For immediatel distinction the system springs are charcterized by different colours and therefore can quickly be allocated to the respective type of load.

Ascending part numbers also mean ascendant loads of the system springs, so it is only neccessary to add the tube diameter (D_h) x of the unloaded spring length (L_0).

Order number	Types of load	Ident. colour
SZ8010. D_h x L_0	light load	green
SZ8020. D_h x L_0	medium load	blue
SZ8030. D_h x L_0	heavy load	red
SZ8040. D_h x L_0	extra heavy load	yellow

Assembling dimensions – basic sizes
The STEINEL system springs are available in nine basic sizes with the following tube diameters (D_h) and rod diameters (D_d):

D_h/D_d	D_h/D_d	D_h/D_d
10/5	20/10	40/20
12,5/6,3	25/12,5	50/25
16/8	32/16	63/38

The assembling lengths of the unloaded springs (L_0) base on inch sizes according to 25 – 254 mm.

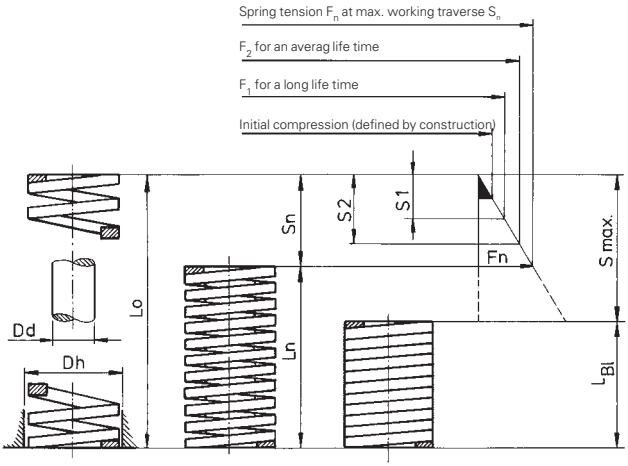
For all basic sizes there are 305 mm long springs available, too, which can be shortened as occasion demands.

Material:
All springs are made of alloyed valve-spring steel wire (Cr-V/CR-Si). This wire is especially resistant against beat and vibration strains. Moreover this quality can also be used for higher temperature ranges up to 230 °C.

Manufacturing process and testing method:
All springs are subject to special heat treatments, shot peened and initialloaded. Thereby tensions are eleminated, to get a high fatique limit.

The ends of the springs are closed and ground square with parallel faces.

The springs are subjected to strict quality checks, with vibration trials additional tests ensue concerning the working life.



Legend of the dimension symbols:

D_h	=	tube diameters (outward guiding) in mm
D_d	=	rod diameter (internal guiding) in mm
L_0	=	length of the unloaded spring
c	=	spring coefficient in N/mm (spring tension causing spring strokes in mm)
s_1 bis s_n	=	travel strokes in mm caused to the spring tensions F_1 — F_n
F_1 bis F_n	=	spring tensions in N caused to the travel strokes s_1 — s_n
L_n	=	minimal allowable length of the loaded spring (L_0 — s_n) caused to the spring tension F_n
S_{max}	=	maximal travel stroke in mm
L_{Bl}	=	block length of compacted spring (L_0 — s_{max}

Tolerances for the length of the unloaded spring, L_0

L_0 mm ± 3%	L_0 mm ± 2,5%	L_0 mm ± 2%
25	76	127
32	89	139
38	102	152
44	115	178
51		203
64		254
		305

Constructional directives for selection:

priority the stroke
priority the spring tension
priority the working life

Note:
It is not allowed to exceed the travel stroke sn (max. working traverse) and the resulting spring tension Fn, listed in the table.

Every spring should by principle be pre-loaded, because natural vibrations and push shock stresses of an unloaded spring reduce the working life.

Every spring has to be guided by an outward guiding (D_h) and/or an internal guiding (D_d). A rule of thumbs is: The crevasse depth of <counterboring respectively the rod length should amount at minimum to 2 – 3 windings of the spring. The longer the spring, the longer the guiding.

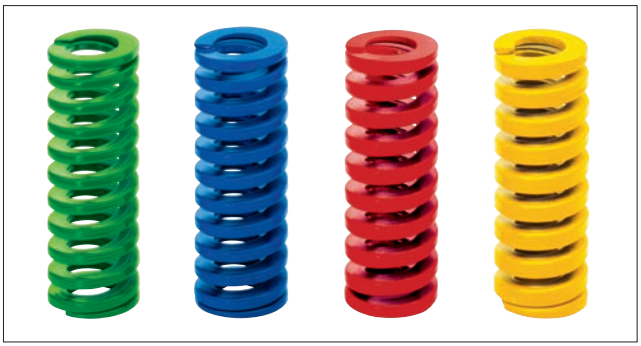
Constructively it should always be aimed at a long working life of the springs. Therefore, the spring should preferable be chosen acc. to the travel stroke s_1 and the resulting spring tension F_1.

Travel stroke symbols:

s_1	=	long working life
s_2	=	average working life
s_n	=	max. working traverse
s_{max}	=	max. travel stroke

System springs

Quick review



ISO 10243

Helical compression springs in four groups

Material:
profiled valve-spring steel wire
(Cr-V / Cr-Si)

The springs are initial-loaded, the ends are closed and ground square parallel.

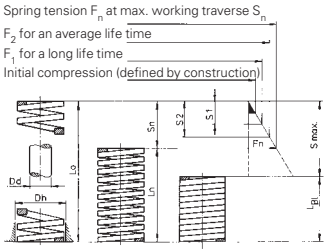
Important characteristics data:
D_h = tube diameter in mm
L_0 = length of the unloaded spring in mm
c = spring coefficient in N/mm
(spring tension causing spring strokes in mm)

Tube Ø	Rod Ø	Unloaded length	Green light load		Blue medium load		Red heavy load		Yellow extra heavy load	
D_h^{H15}	D_{dh15}	L_o	c	Order no.	c	Order no.	c	Order no.	c	Order no.
10	5	25	10	**SZ 8010.10 x 025**	16	**SZ 8020.10 x 025**	22,1	**SZ 8030.10 x 025**	36,8	**SZ 8040.10 x 025**
10	5	32	8,5	**SZ 8010.10 x 032**	13	**SZ 8020.10 x 032**	17,5	**SZ 8030.10 x 032**	27,9	**SZ 8040.10 x 032**
10	5	38	6,8	**SZ 8010.10 x 038**	11,9	**SZ 8020.10 x 038**	17,1	**SZ 8030.10 x 038**	23,7	**SZ 8040.10 x 038**
10	5	44	6	**SZ 8010.10 x 044**	10,3	**SZ 8020.10 x 044**	15	**SZ 8030.10 x 044**	19,2	**SZ 8040.10 x 044**
10	5	51	5	**SZ 8010.10 x 051**	8,9	**SZ 8020.10 x 051**	12,8	**SZ 8030.10 x 051**	16,5	**SZ 8040.10 x 051**
10	5	64	4,3	**SZ 8010.10 x 064**	7,5	**SZ 8020.10 x 064**	10,7	**SZ 8030.10 x 064**	13,2	**SZ 8040.10 x 064**
10	5	76	3,2	**SZ 8010.10 x 076**	5,3	**SZ 8020.10 x 076**	7,5	**SZ 8030.10 x 076**	10,9	**SZ 8040.10 x 076**
10	5	305	1,1	**SZ 8010.10 x 305**	1,6	**SZ 8020.10 x 305**	2,1	**SZ 8030.10 x 305**	2,6	**SZ 8040.10 x 305**
12,5	6,3	25	17,9	**SZ 8010.13 x 025**	30	**SZ 8020.13 x 025**	42,1	**SZ 8030.13 x 025**	58,5	**SZ 8040.13 x 025**
12,5	6,3	32	16,4	**SZ 8010.13 x 032**	24,8	**SZ 8020.13 x 032**	33,2	**SZ 8030.13 x 032**	43,9	**SZ 8040.13 x 032**
12,5	6,3	38	13,6	**SZ 8010.13 x 038**	21,4	**SZ 8020.13 x 038**	29,3	**SZ 8030.13 x 038**	36	**SZ 8040.13 x 038**
12,5	6,3	44	12,1	**SZ 8010.13 x 044**	18,5	**SZ 8020.13 x 044**	24,6	**SZ 8030.13 x 044**	30,3	**SZ 8040.13 x 044**
12,5	6,3	51	11,4	**SZ 8010.13 x 051**	15,5	**SZ 8020.13 x 051**	19,6	**SZ 8030.13 x 051**	26,2	**SZ 8040.13 x 051**
12,5	6,3	64	9,3	**SZ 8010.13 x 064**	12,1	**SZ 8020.13 x 064**	15	**SZ 8030.13 x 064**	21,2	**SZ 8040.13 x 064**
12,5	6,3	76	7,1	**SZ 8010.13 x 076**	10,2	**SZ 8020.13 x 076**	13,2	**SZ 8030.13 x 076**	17,1	**SZ 8040.13 x 076**
12,5	6,3	89	5,4	**SZ 8010.13 x 089**	8,4	**SZ 8020.13 x 089**	11,4	**SZ 8030.13 x 089**	14,5	**SZ 8040.13 x 089**
12,5	6,3	102	4,6	**SZ 8010.13 x 102**	7,1	**SZ 8020.13 x 102**	9,4	**SZ 8030.13 x 102**	12,5	**SZ 8040.13 x 102**
12,5	6,3	305	1,4	**SZ 8010.13 x 305**	2,1	**SZ 8020.13 x 305**	2,8	**SZ 8030.13 x 305**	4,3	**SZ 8040.13 x 305**
16	8	25	23,4	**SZ 8010.16 x 025**	49,4	**SZ 8020.16 x 025**	75,7	**SZ 8030.16 x 025**	118	**SZ 8040.16 x 025**
16	8	32	22,9	**SZ 8010.16 x 032**	37,1	**SZ 8020.16 x 032**	52,8	**SZ 8030.16 x 032**	89	**SZ 8040.16 x 032**
16	8	38	19,3	**SZ 8010.16 x 038**	33,9	**SZ 8020.16 x 038**	48,5	**SZ 8030.16 x 038**	72,1	**SZ 8040.16 x 038**
16	8	44	17,1	**SZ 8010.16 x 044**	30	**SZ 8020.16 x 044**	42,8	**SZ 8030.16 x 044**	60,9	**SZ 8040.16 x 044**
16	8	51	15,7	**SZ 8010.16 x 051**	26,4	**SZ 8020.16 x 051**	37,1	**SZ 8030.16 x 051**	52,3	**SZ 8040.16 x 051**
16	8	64	10,7	**SZ 8010.16 x 064**	20,5	**SZ 8020.16 x 064**	30,3	**SZ 8030.16 x 064**	41,2	**SZ 8040.16 x 064**
16	8	76	10	**SZ 8010.16 x 076**	17,8	**SZ 8020.16 x 076**	25,7	**SZ 8030.16 x 076**	34,1	**SZ 8040.16 x 076**
16	8	89	8,6	**SZ 8010.16 x 089**	15,2	**SZ 8020.16 x 089**	21,7	**SZ 8030.16 x 089**	29,5	**SZ 8040.16 x 089**
16	8	102	7,8	**SZ 8010.16 x 102**	13,5	**SZ 8020.16 x 102**	19,3	**SZ 8030.16 x 102**	25,6	**SZ 8040.16 x 102**
16	8	305	2,5	**SZ 8010.16 x 305**	4,8	**SZ 8020.16 x 305**	7,1	**SZ 8030.16 x 305**	8,4	**SZ 8040.16 x 305**
20	10	25	55,8	**SZ 8010.20 x 025**	98	**SZ 8020.20 x 025**	216	**SZ 8030.20 x 025**	293	**SZ 8040.20 x 025**
20	10	32	45	**SZ 8010.20 x 032**	72,6	**SZ 8020.20 x 032**	168	**SZ 8030.20 x 032**	224	**SZ 8040.20 x 032**
20	10	38	33,3	**SZ 8010.20 x 038**	56	**SZ 8020.20 x 038**	129	**SZ 8030.20 x 038**	177	**SZ 8040.20 x 038**
20	10	44	30	**SZ 8010.20 x 044**	47,5	**SZ 8020.20 x 044**	112	**SZ 8030.20 x 044**	149	**SZ 8040.20 x 044**
20	10	51	24,5	**SZ 8010.20 x 051**	41,7	**SZ 8020.20 x 051**	94	**SZ 8030.20 x 051**	128	**SZ 8040.20 x 051**
20	10	64	20	**SZ 8010.20 x 064**	32,3	**SZ 8020.20 x 064**	72,1	**SZ 8030.20 x 064**	99	**SZ 8040.20 x 064**
20	10	76	16	**SZ 8010.20 x 076**	25,1	**SZ 8020.20 x 076**	59,7	**SZ 8030.20 x 076**	81,7	**SZ 8040.20 x 076**
20	10	89	14	**SZ 8010.20 x 089**	22	**SZ 8020.20 x 089**	50,5	**SZ 8030.20 x 089**	69,5	**SZ 8040.20 x 089**
20	10	102	12	**SZ 8010.20 x 102**	19,8	**SZ 8020.20 x 102**	44,2	**SZ 8030.20 x 102**	60,6	**SZ 8040.20 x 102**
20	10	115	10,9	**SZ 8010.20 x 115**	18,1	**SZ 8020.20 x 115**	38,4	**SZ 8030.20 x 115**	53	**SZ 8040.20 x 115**
20	10	127	9,5	**SZ 8010.20 x 127**	16,6	**SZ 8020.20 x 127**	34,1	**SZ 8030.20 x 127**	47,5	**SZ 8040.20 x 127**
20	10	139	8,4	**SZ 8010.20 x 139**	15,1	**SZ 8020.20 x 139**	31	**SZ 8030.20 x 139**	43	**SZ 8040.20 x 139**
20	10	152	7,5	**SZ 8010.20 x 152**	13,2	**SZ 8020.20 x 152**	28,2	**SZ 8030.20 x 152**	39	**SZ 8040.20 x 152**
20	10	305	4	**SZ 8010.20 x 305**	6,1	**SZ 8020.20 x 305**	15	**SZ 8030.20 x 305**	21,2	**SZ 8040.20 x 305**

Tube Ø D_h^{H15}	Rod Ø D_{dh15}	Unloaded length L_o	Green light load c	Order no.	Blue medium load c	Order no.	Red heavy load c	Order no.	Yellow extra heavy load c	Order no.
25	12,5	25	100	**SZ 8010.25 x 025**	147	**SZ 8020.25 x 025**	375	**SZ 8030.25 x 025**		–
25	12,5	32	80,3	**SZ 8010.25 x 032**	118	**SZ 8020.25 x 032**	297	**SZ 8030.25 x 032**	374,4	**SZ 8040.25 x 032**
25	12,5	38	62	**SZ 8010.25 x 038**	93	**SZ 8020.25 x 038**	219	**SZ 8030.25 x 038**	346	**SZ 8040.25 x 038**
25	12,5	44	52,9	**SZ 8010.25 x 044**	80	**SZ 8020.25 x 044**	187	**SZ 8030.25 x 044**	244	**SZ 8040.25 x 044**
25	12,5	51	44	**SZ 8010.25 x 051**	68,6	**SZ 8020.25 x 051**	156	**SZ 8030.25 x 051**	207,5	**SZ 8040.25 x 051**
25	12,5	64	35,2	**SZ 8010.25 x 064**	53	**SZ 8020.25 x 064**	123	**SZ 8030.25 x 064**	161	**SZ 8040.25 x 064**
25	12,5	76	28	**SZ 8010.25 x 076**	43,2	**SZ 8020.25 x 076**	99	**SZ 8030.25 x 076**	130,8	**SZ 8040.25 x 076**
25	12,5	89	24	**SZ 8010.25 x 089**	38,2	**SZ 8020.25 x 089**	84	**SZ 8030.25 x 089**	110,5	**SZ 8040.25 x 089**
25	12,5	102	21,1	**SZ 8010.25 x 102**	33	**SZ 8020.25 x 102**	73	**SZ 8030.25 x 102**	96,3	**SZ 8040.25 x 102**
25	12,5	115	18,7	**SZ 8010.25 x 115**	28	**SZ 8020.25 x 115**	65	**SZ 8030.25 x 115**	85,7	**SZ 8040.25 x 115**
25	12,5	127	16,7	**SZ 8010.25 x 127**	25,9	**SZ 8020.25 x 127**	57,7	**SZ 8030.25 x 127**	76,3	**SZ 8040.25 x 127**
25	12,5	139	15,3	**SZ 8010.25 x 139**	23,2	**SZ 8020.25 x 139**	52,7	**SZ 8030.25 x 139**	–	–
25	12,5	152	14	**SZ 8010.25 x 152**	20,8	**SZ 8020.25 x 152**	47,8	**SZ 8030.25 x 152**	63,5	**SZ 8040.25 x 152**
25	12,5	178	12,5	**SZ 8010.25 x 178**	17,8	**SZ 8020.25 x 178**	41	**SZ 8030.25 x 178**	53,9	**SZ 8040.25 x 178**
25	12,5	203	10,4	**SZ 8010.25 x 203**	15,8	**SZ 8020.25 x 203**	35,8	**SZ 8030.25 x 203**	47	**SZ 8040.25 x 203**
25	12,5	305	7	**SZ 8010.25 x 305**	10,2	**SZ 8020.25 x 305**	22,9	**SZ 8030.25 x 305**	30,9	**SZ 8040.25 x 305**
32	16	38	94	**SZ 8010.32 x 038**	185	**SZ 8020.32 x 038**	388	**SZ 8030.32 x 038**	528,2	**SZ 8040.32 x 038**
32	16	44	79,5	**SZ 8010.32 x 044**	158	**SZ 8020.32 x 044**	324	**SZ 8030.32 x 044**	424,4	**SZ 8040.32 x 044**
32	16	51	67	**SZ 8010.32 x 051**	134	**SZ 8020.32 x 051**	272	**SZ 8030.32 x 051**	353	**SZ 8040.32 x 051**
32	16	64	53	**SZ 8010.32 x 064**	99	**SZ 8020.32 x 064**	212	**SZ 8030.32 x 064**	269,2	**SZ 8040.32 x 064**
32	16	76	44	**SZ 8010.32 x 076**	80,5	**SZ 8020.32 x 076**	172	**SZ 8030.32 x 076**	218,5	**SZ 8040.32 x 076**
32	16	89	37,2	**SZ 8010.32 x 089**	69,1	**SZ 8020.32 x 089**	141	**SZ 8030.32 x 089**	180,3	**SZ 8040.32 x 089**
32	16	102	32	**SZ 8010.32 x 102**	58,8	**SZ 8020.32 x 102**	122	**SZ 8030.32 x 102**	155	**SZ 8040.32 x 102**
32	16	115	29	**SZ 8010.32 x 115**	51,5	**SZ 8020.32 x 115**	107	**SZ 8030.32 x 115**	140	**SZ 8040.32 x 115**
32	16	127	25	**SZ 8010.32 x 127**	44,8	**SZ 8020.32 x 127**	93	**SZ 8030.32 x 127**	124	**SZ 8040.32 x 127**
32	16	139	23	**SZ 8010.32 x 139**	42,3	**SZ 8020.32 x 139**	86	**SZ 8030.32 x 139**	–	–
32	16	152	21,5	**SZ 8010.32 x 152**	37,8	**SZ 8020.32 x 152**	78	**SZ 8030.32 x 152**	102	**SZ 8040.32 x 152**
32	16	178	18,2	**SZ 8010.32 x 178**	32,5	**SZ 8020.32 x 178**	67,2	**SZ 8030.32 x 178**	88,2	**SZ 8040.32 x 178**
32	16	203	15,8	**SZ 8010.32 x 203**	28,9	**SZ 8020.32 x 203**	59,1	**SZ 8030.32 x 203**	76	**SZ 8040.32 x 203**
32	16	254	12,5	**SZ 8010.32 x 254**	21,4	**SZ 8020.32 x 254**	46,4	**SZ 8030.32 x 254**	60,8	**SZ 8040.32 x 254**
32	16	305	10,3	**SZ 8010.32 x 305**	18,3	**SZ 8020.32 x 305**	38	**SZ 8030.32 x 305**	49	**SZ 8040.32 x 305**
40	20	51	92	**SZ 8010.40 x 051**	181,6	**SZ 8020.40 x 051**	350	**SZ 8030.40 x 051**	628	**SZ 8040.40 x 051**
40	20	64	73	**SZ 8010.40 x 064**	140	**SZ 8020.40 x 064**	269	**SZ 8030.40 x 064**	487	**SZ 8040.40 x 064**
40	20	76	63	**SZ 8010.40 x 076**	108	**SZ 8020.40 x 076**	219	**SZ 8030.40 x 076**	379	**SZ 8040.40 x 076**
40	20	89	51	**SZ 8010.40 x 089**	90,7	**SZ 8020.40 x 089**	190	**SZ 8030.40 x 089**	321	**SZ 8040.40 x 089**
40	20	102	43	**SZ 8010.40 x 102**	81	**SZ 8020.40 x 102**	163	**SZ 8030.40 x 102**	281	**SZ 8040.40 x 102**
40	20	115	39,6	**SZ 8010.40 x 115**	71,8	**SZ 8020.40 x 115**	142	**SZ 8030.40 x 115**	245	**SZ 8040.40 x 115**
40	20	127	37	**SZ 8010.40 x 127**	62,7	**SZ 8020.40 x 127**	128	**SZ 8030.40 x 127**	221	**SZ 8040.40 x 127**
40	20	139	32	**SZ 8010.40 x 139**	57,5	**SZ 8020.40 x 139**	115	**SZ 8030.40 x 139**	202	**SZ 8040.40 x 139**
40	20	152	28	**SZ 8010.40 x 152**	51,6	**SZ 8020.40 x 152**	105	**SZ 8030.40 x 152**	168	**SZ 8040.40 x 152**
40	20	178	25,2	**SZ 8010.40 x 178**	44,1	**SZ 8020.40 x 178**	89	**SZ 8030.40 x 178**	140	**SZ 8040.40 x 178**
40	20	203	22,7	**SZ 8010.40 x 203**	36,7	**SZ 8020.40 x 203**	77	**SZ 8030.40 x 203**	132	**SZ 8040.40 x 203**
40	20	254	17	**SZ 8010.40 x 254**	30,1	**SZ 8020.40 x 254**	61	**SZ 8030.40 x 254**	107	**SZ 8040.40 x 254**
40	20	305	14,8	**SZ 8010.40 x 305**	24,6	**SZ 8020.40 x 305**	51	**SZ 8030.40 x 305**	87,8	**SZ 8040.40 x 305**
50	25	64	156	**SZ 8010.50 x 064**	209	**SZ 8020.50 x 064**	413	**SZ 8030.50 x 064**	709	**SZ 8040.50 x 064**
50	25	76	125	**SZ 8010.50 x 076**	168	**SZ 8020.50 x 076**	339	**SZ 8030.50 x 076**	572	**SZ 8040.50 x 076**
50	25	89	109	**SZ 8010.50 x 089**	140	**SZ 8020.50 x 089**	288	**SZ 8030.50 x 089**	475	**SZ 8040.50 x 089**
50	25	102	94	**SZ 8010.50 x 102**	119	**SZ 8020.50 x 102**	245	**SZ 8030.50 x 102**	405	**SZ 8040.50 x 102**
50	25	115	81	**SZ 8010.50 x 115**	106	**SZ 8020.50 x 115**	215	**SZ 8030.50 x 115**	352	**SZ 8040.50 x 115**
50	25	127	71	**SZ 8010.50 x 127**	97	**SZ 8020.50 x 127**	192	**SZ 8030.50 x 127**	316	**SZ 8040.50 x 127**
50	25	139	66,5	**SZ 8010.50 x 139**	87	**SZ 8020.50 x 139**	168	**SZ 8030.50 x 139**	289	**SZ 8040.50 x 139**
50	25	152	60	**SZ 8010.50 x 152**	80	**SZ 8020.50 x 152**	154	**SZ 8030.50 x 152**	239	**SZ 8040.50 x 152**
50	25	178	52	**SZ 8010.50 x 178**	69,5	**SZ 8020.50 x 178**	134	**SZ 8030.50 x 178**	226	**SZ 8040.50 x 178**
50	25	203	44	**SZ 8010.50 x 203**	59,8	**SZ 8020.50 x 203**	117	**SZ 8030.50 x 203**	187	**SZ 8040.50 x 203**
50	25	254	35	**SZ 8010.50 x 254**	43,9	**SZ 8020.50 x 254**	89	**SZ 8030.50 x 254**	153	**SZ 8040.50 x 254**
50	25	305	28,5	**SZ 8010.50 x 305**	38,6	**SZ 8020.50 x 305**	73	**SZ 8030.50 x 305**	127	**SZ 8040.50 x 305**
63	38	76	189	**SZ 8010.63 x 076**	312	**SZ 8020.63 x 076**	630	**SZ 8030.63 x 076**	842	**SZ 8040.63 x 076**
63	38	89	158	**SZ 8010.63 x 089**	260	**SZ 8020.63 x 089**	485	**SZ 8030.63 x 089**	726	**SZ 8040.63 x 089**
63	38	102	131	**SZ 8010.63 x 102**	221	**SZ 8020.63 x 102**	434	**SZ 8030.63 x 102**	656	**SZ 8040.63 x 102**
63	38	115	116	**SZ 8010.63 x 115**	187	**SZ 8020.63 x 115**	384	**SZ 8030.63 x 115**	534	**SZ 8040.63 x 115**
63	38	127	103	**SZ 8010.63 x 127**	168	**SZ 8020.63 x 127**	349	**SZ 8030.63 x 127**	480	**SZ 8040.63 x 127**
63	38	152	84,3	**SZ 8010.63 x 152**	136	**SZ 8020.63 x 152**	276	**SZ 8030.63 x 152**	396	**SZ 8040.63 x 152**
63	38	178	71,5	**SZ 8010.63 x 178**	114	**SZ 8020.63 x 178**	237	**SZ 8030.63 x 178**	335	**SZ 8040.63 x 178**
63	38	203	61,7	**SZ 8010.63 x 203**	100	**SZ 8020.63 x 203**	210	**SZ 8030.63 x 203**	297	**SZ 8040.63 x 203**
63	38	254	47	**SZ 8010.63 x 254**	78,4	**SZ 8020.63 x 254**	165	**SZ 8030.63 x 254**	235	**SZ 8040.63 x 254**
63	38	305	38,2	**SZ 8010.63 x 305**	64,7	**SZ 8020.63 x 305**	134	**SZ 8030.63 x 305**	194	**SZ 8040.63 x 305**

System springs SZ 8005

for extra light load, colour purple



Helical compression springs for extra light load

Material: Profiled valve-spring steel wire (Cr-V / Cr-Si)

Tolerances similar to DIN 2095.

The springs are initial-loaded, the ends are closed and ground square parallel.

Order example: System spring for extra light load **SZ 8005**
D_h = 25 mm, L_0 = 76 mm
Add **25 x 076**
Order number **SZ 8005.25 x 076**

Add size to order number

Order no. **SZ 8005.** ☐ x ☐

Tube Ø D_h^{H15}	Rod Ø D_{dh15}	Wire ⏥	Unloaded length L_0	Spring coefficient in N/mm c ± 10%	long life s_1 = 25% in mm	F_1 in N	medium life s_2 = 35% in mm	F_2 in N	max. working traverse s_n = 50% in mm	F_n in N	max. travel stroke s_{max} ca.	
20	10	4,0 x 1,7	25	32,1	6,3	202	8,8	281	12,5	401	14	**20 x 025**
20	10		32	24,7	8,0	198	11,2	277	16,0	395	18	**20 x 032**
20	10		38	20,7	9,5	197	13,3	275	19,0	393	22	**20 x 038**
20	10		44	17,8	11,0	196	15,4	275	22,0	392	26	**20 x 044**
20	10		51	15,3	12,8	196	17,9	273	25,5	390	30	**20 x 051**
20	10		64	12,1	16,0	194	22,4	270	32,0	386	38	**20 x 064**
20	10		76	10,2	19,0	194	26,6	270	38,0	386	45	**20 x 076**
20	10		89	8,6	22,3	192	31,1	269	44,5	384	53	**20 x 089**
20	10		102	7,5	25,5	191	35,7	269	51,0	384	62	**20 x 102**
20	10		115	6,7	28,8	193	40,3	269	57,5	384	70	**20 x 115**
20	10		127	6,1	31,8	194	44,5	270	63,5	386	77	**20 x 127**
20	10		139	5,5	34,8	191	48,7	269	69,5	385	85	**20 x 139**
20	10		152	5,1	38,0	194	53,2	269	76,0	384	93	**20 x 152**
20	10		305	2,5	76,3	191	106,8	266	151,0	380	188	**20 x 305**
25	12,5	5,3 x 2,2	25	52,7	6,3	332	8,8	461	12,5	658	14	**25 x 025**
25	12,5		32	40,0	8,0	320	11,2	448	16,0	640	18	**25 x 032**
25	12,5		38	33,3	9,5	316	13,3	444	19,0	634	22	**25 x 038**
25	12,5		44	28,6	11,0	315	15,4	440	22,0	629	25	**25 x 044**
25	12,5		51	24,7	12,8	316	17,9	441	25,5	630	30	**25 x 051**
25	12,5		64	19,4	16,0	310	22,4	435	32,0	622	38	**25 x 064**
25	12,5		76	16,3	19,0	310	26,6	433	38,0	618	45	**25 x 076**
25	12,5		89	13,9	22,3	310	31,1	433	44,5	618	53	**25 x 089**
25	12,5		102	12,1	25,5	309	35,7	433	51,0	618	61	**25 x 102**
25	12,5		115	10,8	28,8	311	40,3	433	57,5	619	70	**25 x 115**
25	12,5		127	9,8	31,8	312	44,5	434	63,5	620	77	**25 x 127**
25	12,5		139	8,9	34,8	310	48,7	433	69,5	618	85	**25 x 139**
25	12,5		152	8,1	38,0	308	53,2	431	76,0	616	93	**25 x 152**
25	12,5		178	6,9	44,5	307	62,3	431	89,0	616	109	**25 x 178**
25	12,5		203	6,1	50,8	309	71,0	431	101,5	615	124	**25 x 203**
25	12,5		305	4,0	76,3	305	106,8	429	152,5	613	188	**25 x 305**
32	16	6,4 x 2,6	38	43,8	9,5	416	13,3	582	19,0	831	22	**32 x 038**
32	16		44	37,5	11,0	412	15,4	578	22,0	825	26	**32 x 044**
32	16		51	32,3	12,8	413	17,9	576	25,5	823	31	**32 x 051**
32	16		64	25,4	16,0	406	22,4	569	32,0	813	39	**32 x 064**
32	16		76	21,3	19,0	405	26,6	566	38,0	809	47	**32 x 076**
32	16		89	18,1	22,3	404	31,1	563	44,5	804	56	**32 x 089**
32	16		102	15,8	25,5	403	35,7	562	51,0	803	64	**32 x 102**
32	16		115	13,9	28,8	400	40,3	560	57,5	800	73	**32 x 115**
32	16		127	12,6	31,8	401	44,5	559	63,5	799	81	**32 x 127**
32	16		139	11,4	34,8	397	48,7	557	69,5	796	89	**32 x 139**
32	16		152	10,5	38,0	399	53,2	560	76,0	800	97	**32 x 152**
32	16		178	8,9	44,5	396	62,3	558	89,0	796	114	**32 x 178**
32	16		203	7,8	50,8	396	71,0	555	101,5	793	131	**32 x 203**
32	16		254	6,2	63,5	394	88,9	549	127,0	784	163	**32 x 254**
32	16		305	5,2	76,3	397	106,8	552	152,5	788	197	**32 x 305**

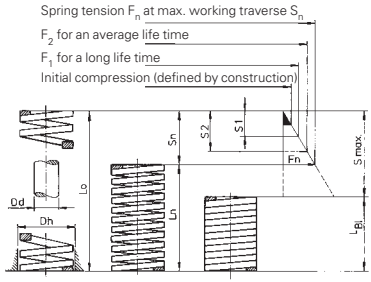
Add
size to
order number

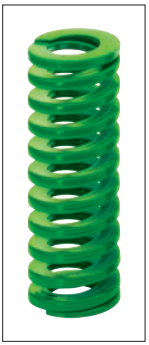
Order no. **SZ 8005.** □ x □

Tube Ø D_h^{H15}	Rod Ø D_{dh15}	Wire	Unloaded length L_0	Spring coefficient in N/mm c ± 10%	long life s_1 = 25% in mm	F_1 in N	medium life s_2 = 35% in mm	F_2 in N	max. working traverse s_n = 50% in mm	F_n in N	max. travel stroke s_{max} ca.	
40	20	7,8 x 3,4	51	50,8	12,8	650	17,9	908	25,5	1297	26	**40 x 051**
40	20		64	39,7	16,0	635	22,4	888	32,0	1269	34	**40 x 064**
40	20		76	33,1	19,0	629	26,6	879	38,0	1256	40	**40 x 076**
40	20		89	28,1	22,3	627	31,1	874	44,5	1249	48	**40 x 089**
40	20		102	24,5	25,5	625	35,7	874	51,0	1249	55	**40 x 102**
40	20		115	21,6	28,8	622	40,3	871	57,5	1244	63	**40 x 115**
40	20		127	19,5	31,8	620	44,5	867	63,5	1239	70	**40 x 127**
40	20		139	17,8	34,8	619	48,7	867	69,5	1238	76	**40 x 139**
40	20		152	16,3	38,0	619	53,2	865	76,0	1235	84	**40 x 152**
40	20		178	13,8	44,5	614	62,3	862	89,0	1231	99	**40 x 178**
40	20		203	12,1	50,8	615	71,0	863	101,5	1232	113	**40 x 203**
40	20		254	9,7	63,5	616	88,9	859	127,0	1227	142	**40 x 254**
40	20		305	8,0	76,3	610	106,8	858	152,5	1226	171	**40 x 305**
50	25	10,7 x 4,4	64	80,2	16,0	1283	22,4	1796	32,0	2566	37	**50 x 064**
50	25		76	66,9	19,0	1271	26,6	1781	38,0	2544	45	**50 x 076**
50	25		89	56,6	22,3	1262	31,1	1763	44,5	2519	53	**50 x 089**
50	25		102	49,3	25,5	1257	35,7	1762	51,0	2517	62	**50 x 102**
50	25		115	43,5	28,8	1253	40,3	1751	57,5	2501	70	**50 x 115**
50	25		127	39,3	31,8	1250	44,5	1746	63,5	2494	78	**50 x 127**
50	25		139	35,8	34,8	1246	48,7	1742	69,5	2489	85	**50 x 139**
50	25		152	32,8	38,0	1246	53,2	1743	76,0	2490	94	**50 x 152**
50	25		178	27,8	44,5	1237	62,3	1731	89,0	2474	110	**50 x 178**
50	25		203	24,2	50,8	1230	71,0	1720	101,5	2457	126	**50 x 203**
50	25		254	19,2	63,5	1219	88,9	1711	127,0	2444	159	**50 x 254**
50	25		305	16,0	76,3	1221	106,8	1712	152,5	2446	192	**50 x 305**

System springs SZ 8010

for light load, colour green





ISO 10243

Helical compression springs for light load

Material: Profiled valve-spring steel wire (Cr-V / Cr-Si)

Tolerances similar to DIN 2095

The springs are initial-loaded, the ends are closed and ground square parallel.

Order example: System spring for light load
SZ 8010
D_h = 25 mm, L_0 = 76 mm
Add **25 x 076**
Order number **SZ 8010.25 x 076**

Add size to order number

Order no. **SZ 8010.** ☐ x ☐

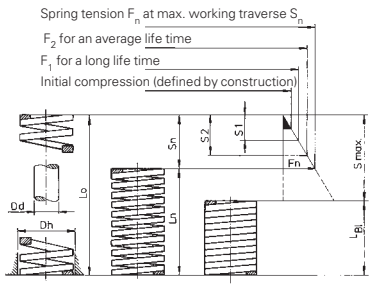
Tube Ø D_h^{H15}	Rod Ø D_{dh15}	Wire	Unloaded length L_0	Spring coefficient in N/mm c ± 10%	long life s_1 = 25% in mm	F_1 in N	medium life s_2 = 35% in mm	F_2 in N	max. working traverse s_n = 40% in mm	F_n in N	max. travel stroke s_{max} ca.	
10	5	1,7x1,1	25	10,0	6,3	63	8,8	88	10,0	100	13	**10 x 025**
10	5		32	8,5	8,0	68	11,2	95	12,8	108	16	**10 x 032**
10	5		38	6,8	9,5	64	13,3	90	15,2	103	20	**10 x 038**
10	5		44	6,0	11,0	66	15,4	92	17,6	105	24	**10 x 044**
10	5		51	5,0	12,8	64	17,9	89	20,4	102	27	**10 x 051**
10	5		64	4,3	16,0	68	22,4	96	25,6	110	35	**10 x 064**
10	5		76	3,2	19,0	61	26,6	85	30,4	97	39	**10 x 076**
10	5		305	1,1	76,3	83	106,8	117	122,0	134	154	**10 x 305**
12,5	6,3	2,3x1,5	25	17,9	6,3	112	8,8	157	10,0	179	13	**13 x 025**
12,5	6,3		32	16,4	8,0	131	11,2	183	12,8	209	17	**13 x 032**
12,5	6,3		38	13,6	9,5	129	13,3	180	15,2	206	21	**13 x 038**
12,5	6,3		44	12,1	11,0	133	15,4	186	17,6	212	26	**13 x 044**
12,5	6,3		51	11,4	12,8	145	17,9	204	20,4	232	29	**13 x 051**
12,5	6,3		64	9,3	16,0	148	22,4	208	25,6	238	37	**13 x 064**
12,5	6,3		76	7,1	19,0	134	26,6	188	30,4	215	42	**13 x 076**
12,5	6,3		89	5,4	22,3	120	31,1	167	35,6	192	50	**13 x 089**
12,5	6,3		102	4,6	25,5	117	35,7	164	40,8	188	58	**13 x 102**
12,5	6,3		305	1,4	76,3	106	106,8	149	122,0	170	162	**13 x 305**
16	8	3,2x1,7	25	23,4	6,3	147	8,8	205	10,0	234	13	**16 x 025**
16	8		32	22,9	8,0	183	11,2	256	12,8	293	17	**16 x 032**
16	8		38	19,3	9,5	183	13,3	256	15,2	293	20	**16 x 038**
16	8		44	17,1	11,0	188	15,4	263	17,6	300	25	**16 x 044**
16	8		51	15,7	12,8	200	17,9	281	20,4	320	27	**16 x 051**
16	8		64	10,7	16,0	171	22,4	239	25,6	273	36	**16 x 064**
16	8		76	10,0	19,0	190	26,6	266	30,4	304	43	**16 x 076**
16	8		89	8,6	22,3	191	31,1	267	35,6	306	52	**16 x 089**
16	8		102	7,8	25,5	198	35,7	278	40,8	318	58	**16 x 102**
16	8		305	2,5	76,3	190	106,8	267	122,0	305	166	**16 x 305**
20	10	4,0x2,1	25	55,8	6,3	351	8,8	491	10,0	558	13	**20 x 025**
20	10		32	45,0	8,0	360	11,2	504	12,8	576	17	**20 x 032**
20	10		38	33,3	9,5	316	13,3	442	15,2	506	20	**20 x 038**
20	10		44	30,0	11,0	330	15,4	462	17,6	528	24	**20 x 044**
20	10		51	24,5	12,8	313	17,9	438	20,4	499	27	**20 x 051**
20	10		64	20,0	16,0	320	22,4	448	25,6	512	35	**20 x 064**
20	10		76	16,0	19,0	304	26,6	425	30,4	486	40	**20 x 076**
20	10		89	14,0	22,3	312	31,1	435	35,6	498	49	**20 x 089**
20	10		102	12,0	25,5	306	35,7	428	40,8	489	55	**20 x 102**
20	10		115	10,9	28,8	313	40,3	439	46,0	501	62	**20 x 115**
20	10		127	9,5	31,8	302	44,5	422	50,8	482	71	**20 x 127**
20	10		139	8,4	34,8	292	48,7	409	55,6	467	76	**20 x 139**
20	10		152	7,5	38,0	285	53,2	399	60,8	456	81	**20 x 152**
20	10		305	4,0	76,3	305	106,8	427	122,0	488	168	**20 x 305**

Order no. **SZ 8010.** □ x □

Tube Ø D_h^{H15}	Rod Ø D_{dh15}	Wire ▱	Unloaded length L_0	Spring coefficient in N/mm c ± 10%	long life s_1 = 25% in mm	F_1 in N	medium life s_2 = 35% in mm	F_2 in N	max. working traverse s_n = 40% in mm	F_n in N	max. travel stroke s_{max} ca.	
25	12,5	5,3x2,7	25	100,0	6,3	630	8,8	880	10,0	1000	12	**25 x 025**
25	12,5		32	80,3	8,0	642	11,2	899	12,8	1027	16	**25 x 032**
25	12,5		38	62,0	9,5	589	13,3	824	15,2	942	19	**25 x 038**
25	12,5		44	52,9	11,0	581	15,4	814	17,6	931	22	**25 x 044**
25	12,5		51	44,0	12,8	563	17,9	787	20,4	897	25	**25 x 051**
25	12,5		64	35,2	16,0	563	22,4	788	25,6	901	34	**25 x 064**
25	12,5		76	28,0	19,0	532	26,6	744	30,4	851	38	**25 x 076**
25	12,5		89	24,0	22,3	535	31,1	746	35,6	854	48	**25 x 089**
25	12,5		102	21,1	25,5	538	35,7	753	40,8	860	54	**25 x 102**
25	12,5		115	18,7	28,8	538	40,3	753	46,0	860	61	**25 x 115**
25	12,5		127	16,7	31,8	531	44,5	743	50,8	848	69	**25 x 127**
25	12,5		139	15,3	34,8	532	48,7	745	55,6	851	75	**25 x 139**
25	12,5		152	14,0	38,0	532	53,2	744	60,8	851	81	**25 x 152**
25	12,5		178	12,5	44,5	556	62,3	778	71,2	890	96	**25 x 178**
25	12,5		203	10,4	50,8	528	71,0	738	81,2	844	110	**25 x 203**
25	12,5		305	7,0	76,3	534	106,8	747	122,0	854	168	**25 x 305**
32	16	6,7x3,3	38	94,0	9,5	893	13,3	1250	15,2	1428	18	**32 x 038**
32	16		44	79,5	11,0	874	15,4	1224	17,6	1399	22	**32 x 044**
32	16		51	67,0	12,8	857	17,9	1199	20,4	1366	25	**32 x 051**
32	16		64	53,0	16,0	848	22,4	1187	25,6	1356	34	**32 x 064**
32	16		76	44,0	19,0	836	26,6	1170	30,4	1337	40	**32 x 076**
32	16		89	37,2	22,3	829	31,1	1156	35,6	1324	48	**32 x 089**
32	16		102	32,0	25,5	816	35,7	1142	40,8	1305	55	**32 x 102**
32	16		115	29,0	28,8	835	40,3	1168	46,0	1334	63	**32 x 115**
32	16		127	25,0	31,8	795	44,5	1112	50,8	1270	69	**32 x 127**
32	16		139	23,0	34,8	800	48,7	1120	55,6	1279	77	**32 x 139**
32	16		152	21,5	38,0	817	53,2	1143	60,8	1307	81	**32 x 152**
32	16		178	18,2	44,5	809	62,3	1133	71,2	1295	95	**32 x 178**
32	16		203	15,8	50,8	802	71,0	1121	81,2	1282	112	**32 x 203**
32	16		254	12,5	63,5	793	88,9	1111	101,6	1270	143	**32 x 254**
32	16		305	10,3	76,3	785	106,8	1100	122,0	1256	175	**32 x 305**
40	20	8,0x4,0	51	92,0	12,8	1177	17,9	1646	20,4	1876	25	**40 x 051**
40	20		64	73,0	16,0	1168	22,4	1635	25,6	1868	33	**40 x 064**
40	20		76	63,0	19,0	1197	26,6	1675	30,4	1915	39	**40 x 076**
40	20		89	51,0	22,3	1137	31,1	1586	35,6	1815	47	**40 x 089**
40	20		102	43,0	25,5	1096	35,7	1535	40,8	1754	54	**40 x 102**
40	20		115	39,6	28,8	1140	40,3	1595	46,0	1821	61	**40 x 115**
40	20		127	37,0	31,8	1176	44,5	1646	50,8	1879	66	**40 x 127**
40	20		139	32,0	34,8	1114	48,7	1558	55,6	1779	76	**40 x 139**
40	20		152	28,0	38,0	1064	53,2	1489	60,8	1702	81	**40 x 152**
40	20		178	25,2	44,5	1121	62,3	1569	71,2	1794	93	**40 x 178**
40	20		203	22,7	50,8	1153	71,0	1611	81,2	1843	110	**40 x 203**
40	20		254	17,0	63,5	1079	88,9	1511	101,6	1727	136	**40 x 254**
40	20		305	14,8	76,3	1129	106,8	1580	122,0	1805	163	**40 x 305**
50	25	11,5x5,5	64	156,0	16,0	2496	22,4	3494	25,6	3993	31	**50 x 064**
50	25		76	125,0	19,0	2375	26,6	3325	30,4	3800	36	**50 x 076**
50	25		89	109,0	22,3	2430	31,1	3389	35,6	3880	44	**50 x 089**
50	25		102	94,0	25,5	2397	35,7	3355	40,8	3835	49	**50 x 102**
50	25		115	81,0	28,8	2332	40,3	3264	46,0	3726	60	**50 x 115**
50	25		127	71,0	31,8	2257	44,5	3159	50,8	3606	64	**50 x 127**
50	25		139	66,5	34,8	2314	48,7	3239	55,6	3697	70	**50 x 139**
50	25		152	60,0	38,0	2280	53,2	3192	60,8	3648	77	**50 x 152**
50	25		178	52,0	44,5	2314	62,3	3239	71,2	3702	94	**50 x 178**
50	25		203	44,0	50,8	2235	71,0	3124	81,2	3572	105	**50 x 203**
50	25		254	35,0	63,5	2222	88,9	3111	101,6	3556	126	**50 x 254**
50	25		305	28,5	76,3	2174	106,8	3044	122,0	3477	168	**50 x 305**
63	38	11,6x7,7	76	189,0	19,0	3591	26,6	5027	30,4	5744	38	**63 x 076**
63	38		89	158,0	22,3	3523	31,1	4913	35,6	5624	45	**63 x 089**
63	38		102	131,0	25,5	3340	35,7	4676	40,8	5344	52	**63 x 102**
63	38		115	116,0	28,8	3340	40,3	4674	46,0	5336	60	**63 x 115**
63	38		127	103,0	31,8	3275	44,5	4583	50,8	5232	63	**63 x 127**
63	38		152	84,3	38,0	3203	53,2	4484	60,8	5125	78	**63 x 152**
63	38		178	71,5	44,5	3181	62,3	4454	71,2	5090	89	**63 x 178**
63	38		203	61,7	50,8	3134	71,0	4380	81,2	5010	108	**63 x 203**
63	38		254	47,0	63,5	2984	88,9	4178	101,6	4775	137	**63 x 254**
63	38		305	38,2	76,3	2914	106,8	4079	122,0	4660	163	**63 x 305**

System springs SZ 8020

for medium load, colour blue



ISO 10243

Helical compression springs for medium load

Material: Profiled valve-spring steel wire (Cr-V / Cr-Si)

Tolerances similar to DIN 2095.

The springs are initial-loaded, the ends are closed and ground square parallel.

Order example: System spring for medium load **SZ 8020**
D_h = 25 mm, L_0 = 76 mm
Add **25 x 076**
Order number **SZ 8020.25 x 076**

Add size to order number

Order no. **SZ 8020.** ☐ x ☐

Tube Ø D_h^{H15}	Rod Ø D_{dh15}	Wire	Unloaded length L_0	Spring coefficient in N/mm c ± 10%	long life s_1 = 20% in mm	F_1 in N	medium life s_2 = 25% in mm	F_2 in N	max. working traverse s_n = 35% in mm	F_n in N	max. travel stroke s_{max} ca.	
10	5	1,8x1,2	25	16,0	5,0	80	6,3	100	8,8	140	12	**10 x 025**
10	5		32	13,0	6,4	83	8,0	104	11,2	145	14	**10 x 032**
10	5		38	11,9	7,6	90	9,5	113	13,3	158	19	**10 x 038**
10	5		44	10,3	8,8	90	11,4	117	15,4	158	23	**10 x 044**
10	5		51	8,9	10,2	90	12,8	113	17,9	159	27	**10 x 051**
10	5		64	7,5	12,8	96	16,0	120	22,4	168	31	**10 x 064**
10	5		76	5,3	15,2	80	19,0	100	26,6	140	37	**10 x 076**
10	5		305	1,6	61,0	97	76,3	122	106,8	170	137	**10 x 305**
12,5	6,3	2,5x1,7	25	30,0	5,0	150	6,3	189	8,8	264	10	**13 x 025**
12,5	6,3		32	24,8	6,4	158	8,0	198	11,2	277	13	**13 x 032**
12,5	6,3		38	21,4	7,6	162	9,5	203	13,3	284	16	**13 x 038**
12,5	6,3		44	18,5	8,8	162	11,0	203	15,4	284	20	**13 x 044**
12,5	6,3		51	15,5	10,2	158	12,8	198	17,9	277	25	**13 x 051**
12,5	6,3		64	12,1	12,8	154	16,0	193	22,4	271	28	**13 x 064**
12,5	6,3		76	10,2	15,2	155	19,0	193	26,6	271	34	**13 x 076**
12,5	6,3		89	8,4	17,8	149	22,3	187	31,1	261	41	**13 x 089**
12,5	6,3		102	7,1	20,4	145	25,5	181	35,7	253	46	**13 x 102**
12,5	6,3		305	2,1	61,0	128	76,3	160	106,8	224	128	**13 x 305**
16	8	3,2x2,0	25	49,4	5,0	247	6,3	311	8,8	434	11	**16 x 025**
16	8		32	37,1	6,4	237	8,0	296	11,2	415	15	**16 x 032**
16	8		38	33,9	7,6	257	9,5	322	13,3	450	18	**16 x 038**
16	8		44	30,0	8,8	264	11,0	330	15,4	462	22	**16 x 044**
16	8		51	26,4	10,2	269	12,8	337	17,9	472	24	**16 x 051**
16	8		64	20,5	12,8	262	16,0	328	22,4	459	32	**16 x 064**
16	8		76	17,8	15,2	270	19,0	338	26,6	473	36	**16 x 076**
16	8		89	15,2	17,8	270	22,3	338	31,1	472	43	**16 x 089**
16	8		102	13,5	20,4	275	25,5	344	35,7	481	47	**16 x 102**
16	8		305	4,8	61,0	292	76,3	366	106,8	512	139	**16 x 305**
20	10	4,0x2,4	25	98,0	5,0	490	6,3	617	8,8	862	10	**20 x 025**
20	10		32	72,6	6,4	464	8,0	580	11,2	813	13	**20 x 032**
20	10		38	56,0	7,6	425	9,5	532	13,3	744	16	**20 x 038**
20	10		44	47,5	8,8	418	11,0	522	15,4	731	19	**20 x 044**
20	10		51	41,7	10,2	425	12,8	533	17,9	746	21	**20 x 051**
20	10		64	32,3	12,8	413	16,0	516	22,4	723	28	**20 x 064**
20	10		76	25,1	15,2	381	19,0	476	26,6	667	33	**20 x 076**
20	10		89	22,0	17,8	391	22,3	490	31,1	684	41	**20 x 089**
20	10		102	19,8	20,4	403	25,5	504	35,7	706	48	**20 x 102**
20	10		115	18,1	23,0	416	28,8	521	40,3	729	55	**20 x 115**
20	10		127	16,6	25,4	421	31,8	527	44,5	738	61	**20 x 127**
20	10		139	15,1	27,8	420	34,8	525	48,7	735	67	**20 x 139**
20	10		152	13,2	30,4	401	38,0	501	53,2	702	74	**20 x 152**
20	10		305	6,1	61,0	372	76,3	465	106,8	651	146	**20 x 305**

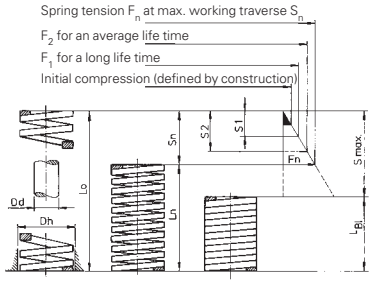
Add
size to
order number

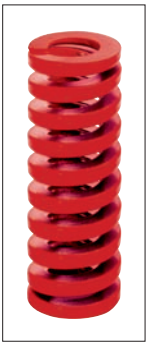
Order no. **SZ 8020.** □ x □

Tube Ø D_h^{H15}	Rod Ø D_{dh15}	Wire ▱	Unloaded length L_0	Spring coefficient in N/mm c ± 10%	long life s_1 = 20% in mm	F_1 in N	medium life s_2 = 25% in mm	F_2 in N	max. working traverse s_n = 35% in mm	F_n in N	max. travel stroke s_{max} ca.	
25	12,5	5,3 x 3,1	25	147,0	5,0	735	6,3	926	8,8	1293	11	**25 x 025**
25	12,5		32	118,0	6,4	755	8,0	944	11,2	1321	13	**25 x 032**
25	12,5		38	93,0	7,6	706	9,5	883	13,3	1236	18	**25 x 038**
25	12,5		44	80,8	8,8	711	11,0	888	15,4	1244	21	**25 x 044**
25	12,5		51	68,6	10,2	699	12,8	878	17,9	1227	23	**25 x 051**
25	12,5		64	53,0	12,8	678	16,0	848	22,4	1187	30	**25 x 064**
25	12,5		76	43,2	15,2	656	19,0	820	26,6	1149	35	**25 x 076**
25	12,5		89	38,2	17,8	679	22,3	851	31,1	1188	43	**25 x 089**
25	12,5		102	33,0	20,4	673	25,5	841	35,7	1178	49	**25 x 102**
25	12,5		115	28,0	23,0	644	28,8	806	40,3	1128	56	**25 x 115**
25	12,5		127	25,9	25,4	657	31,8	823	44,5	1152	60	**25 x 127**
25	12,5		139	23,2	27,8	645	34,8	807	48,7	1130	65	**25 x 139**
25	12,5		152	20,8	30,4	632	38,0	790	53,2	1106	71	**25 x 152**
25	12,5		178	17,8	35,6	633	44,5	792	62,3	1108	85	**25 x 178**
25	12,5		203	15,8	40,6	641	50,8	802	71,0	1121	96	**25 x 203**
25	12,5		305	10,2	61,0	622	76,3	778	106,8	1089	150	**25 x 305**
32	16	6,8 x 4,0	38	185,0	7,6	1406	9,5	1757	13,3	2460	17	**32 x 038**
32	16		44	158,0	8,8	1390	11,0	1738	15,4	2433	19	**32 x 044**
32	16		51	134,0	10,2	1366	12,8	1715	17,9	2398	23	**32 x 051**
32	16		64	99,0	12,8	1267	16,0	1584	22,4	2217	30	**32 x 064**
32	16		76	80,5	15,2	1223	19,0	1529	26,6	2141	34	**32 x 076**
32	16		89	69,1	17,8	1229	22,3	1540	31,1	2149	42	**32 x 089**
32	16		102	58,8	20,4	1199	25,5	1499	35,7	2099	47	**32 x 102**
32	16		115	51,5	23,0	1184	28,8	1483	40,3	2059	55	**32 x 115**
32	16		127	44,8	25,4	1137	31,8	1424	44,5	1993	61	**32 x 127**
32	16		139	42,3	27,8	1176	34,8	1472	48,7	2060	68	**32 x 139**
32	16		152	37,8	30,4	1149	38,0	1436	53,2	2010	75	**32 x 152**
32	16		178	32,5	35,6	1157	44,5	1446	62,3	2024	89	**32 x 178**
32	16		203	28,9	40,6	1173	50,8	1468	71,0	2051	101	**32 x 203**
32	16		254	21,4	50,8	1097	63,5	1358	88,9	1902	124	**32 x 254**
32	16		305	18,3	61,0	1116	76,3	1396	106,8	1954	150	**32 x 305**
40	20	8,1 x 4,8	51	181,6	10,2	1852	12,8	2324	17,9	3250	21	**40 x 051**
40	20		64	140,0	12,8	1792	16,0	2240	22,4	3136	28	**40 x 064**
40	20		76	108,0	15,2	1641	19,0	2052	26,6	2872	33	**40 x 076**
40	20		89	90,7	17,8	1614	22,3	2022	31,1	2820	41	**40 x 089**
40	20		102	81,0	20,4	1652	25,5	2065	35,7	2891	45	**40 x 102**
40	20		115	71,8	23,0	1651	28,8	2067	40,3	2893	52	**40 x 115**
40	20		127	62,7	25,4	1592	31,8	1993	44,5	2790	59	**40 x 127**
40	20		139	57,5	27,8	1599	34,8	2001	48,7	2800	66	**40 x 139**
40	20		152	51,6	30,4	1568	38,0	1960	53,2	2745	71	**40 x 152**
40	20		178	44,1	35,6	1569	44,5	1962	62,3	2747	83	**40 x 178**
40	20		203	36,7	40,6	1490	50,8	1864	71,0	2605	94	**40 x 203**
40	20		254	30,1	50,8	1529	63,5	1911	88,9	2675	114	**40 x 254**
40	20		305	24,6	61,0	1500	76,3	1876	106,8	2627	148	**40 x 305**
50	25	10,9 x 6,0	64	209,0	12,8	2775	16,0	3344	22,4	4681	30	**50 x 064**
50	25		76	168,0	15,2	2553	19,0	3192	26,6	4468	36	**50 x 076**
50	25		89	140,0	17,8	2492	22,3	3122	31,1	4354	43	**50 x 089**
50	25		102	119,0	20,4	2427	25,5	3034	35,7	4248	48	**50 x 102**
50	25		115	106,0	23,0	2438	28,8	3052	40,3	4271	55	**50 x 115**
50	25		127	97,0	25,4	2463	31,8	3084	44,5	4316	63	**50 x 127**
50	25		139	87,0	27,8	2419	34,8	3028	48,7	4237	66	**50 x 139**
50	25		152	80,0	30,4	2432	38,0	3040	53,2	4256	72	**50 x 152**
50	25		178	69,5	35,6	2474	44,5	3092	62,3	4329	85	**50 x 178**
50	25		203	59,8	40,6	2427	50,8	3037	71,0	4245	95	**50 x 203**
50	25		254	43,9	50,8	2230	63,5	2787	88,9	3902	125	**50 x 254**
50	25		305	38,6	61,0	2354	76,3	2945	106,8	4122	150	**50 x 305**
63	38	11,5 x 9,3	76	312,0	15,2	4742	19,0	5928	26,6	8299	30	**63 x 076**
63	38		89	260,0	17,8	4628	22,3	5798	31,1	8086	38	**63 x 089**
63	38		102	221,0	20,4	4508	25,5	5635	35,7	7889	43	**63 x 102**
63	38		115	178,0	23,0	4301	28,8	5385	40,3	7536	50	**63 x 115**
63	38		127	168,0	25,4	4267	31,8	5342	44,5	7476	52	**63 x 127**
63	38		152	136,0	30,4	4134	38,0	5168	53,2	7235	67	**63 x 152**
63	38		178	114,0	35,6	4058	44,5	5073	62,3	7102	78	**63 x 178**
63	38		203	100,0	40,6	4060	50,8	5080	71,0	7100	88	**63 x 203**
63	38		254	78,4	50,8	3982	63,5	4978	88,9	6969	115	**63 x 254**
63	38		305	64,7	61,0	3946	76,3	4936	106,8	6909	134	**63 x 305**

System springs SZ 8030

for heavy load, colour red





ISO 10243

Helical compression springs for heavy load

Material: Profiled valve-spring steel wire (Cr-V / Cr-Si)

Tolerances similar to DIN 2095.

The springs are initial-loaded, the ends are closed and ground square parallel.

Order example: System spring for heavy load
SZ 8030
D_h = 25 mm, L_0 = 76 mm
Add **25 x 076**
Order number **SZ 8030.25 x 076**

Add size to order number

Order no. **SZ 8030.** ☐ x ☐

Tube Ø D_h^{H15}	Rod Ø D_{dh15}	Wire	Unloaded length L_0	Spring coefficient in N/mm c ± 10%	long life s_1 = 15% in mm	F_1 in N	medium life s_2 = 20% in mm	F_2 in N	max. working traverse s_n = 30% in mm	F_n in N	max. travel stroke s_{max} ca.	
10	5	1,8x1,4	25	22,1	3,7	81	5,0	110	7,5	165	9	**10 x 025**
10	5		32	17,5	4,8	84	6,4	112	9,6	168	12	**10 x 032**
10	5		38	17,1	5,7	97	7,6	129	11,4	194	15	**10 x 038**
10	5		44	15,0	6,6	99	8,8	132	13,2	198	17	**10 x 044**
10	5		51	12,8	7,6	97	10,2	130	15,3	195	21	**10 x 051**
10	5		64	10,7	9,6	102	12,8	136	19,2	205	26	**10 x 064**
10	5		76	7,5	11,4	85	15,2	114	22,8	171	31	**10 x 076**
10	5		305	2,1	45,7	95	61,0	128	91,5	192	122	**10 x 305**
12,5	6,3	2,4x2,0	25	42,1	3,7	155	5,0	210	7,5	315	9	**13 x 025**
12,5	6,3		32	33,2	4,8	159	6,4	212	9,6	318	13	**13 x 032**
12,5	6,3		38	29,3	5,7	167	7,6	222	11,4	334	15	**13 x 038**
12,5	6,3		44	24,6	6,6	162	8,8	216	13,2	324	18	**13 x 044**
12,5	6,3		51	19,6	7,6	148	10,2	199	15,3	299	20	**13 x 051**
12,5	6,3		64	15,0	9,6	144	12,8	192	19,2	288	26	**13 x 064**
12,5	6,3		76	13,2	11,4	150	15,2	200	22,8	300	30	**13 x 076**
12,5	6,3		89	11,4	13,3	151	17,8	202	26,7	304	35	**13 x 089**
12,5	6,3		102	9,4	15,3	144	20,4	192	30,6	287	41	**13 x 102**
12,5	6,3		305	2,8	45,7	127	61,0	170	91,5	247	123	**13 x 305**
16	8	3,0x2,4	25	75,7	3,7	280	5,0	378	7,5	567	9	**16 x 025**
16	8		32	52,8	4,8	253	6,4	337	9,6	506	14	**16 x 032**
16	8		38	48,5	5,7	276	7,6	368	11,4	552	17	**16 x 038**
16	8		44	42,8	6,6	282	8,8	376	13,2	564	20	**16 x 044**
16	8		51	37,1	7,6	281	10,2	378	15,3	567	21	**16 x 051**
16	8		64	30,3	9,6	290	12,8	387	19,2	581	28	**16 x 064**
16	8		76	25,7	11,4	292	15,2	390	22,8	585	33	**16 x 076**
16	8		89	21,7	13,3	288	17,8	386	26,7	579	39	**16 x 089**
16	8		102	19,3	15,3	295	20,4	393	30,6	590	44	**16 x 102**
16	8		305	7,1	45,7	324	61,0	433	91,5	649	127	**16 x 305**
20	10	4,0x3,2	25	216,0	3,7	799	5,0	1080	7,6	1641	9	**20 x 025**
20	10		32	168,0	4,8	806	6,4	1075	9,6	1612	11	**20 x 032**
20	10		38	129,0	5,7	735	7,6	980	11,4	1470	13	**20 x 038**
20	10		44	112,0	6,6	739	8,8	985	13,2	1478	16	**20 x 044**
20	10		51	94,0	7,6	714	10,2	958	15,3	1438	20	**20 x 051**
20	10		64	72,1	9,6	692	12,8	922	19,2	1384	25	**20 x 064**
20	10		76	59,7	11,4	680	15,2	907	22,8	1361	29	**20 x 076**
20	10		89	50,5	13,3	671	17,8	898	26,7	1348	35	**20 x 089**
20	10		102	44,2	15,3	676	20,4	901	30,6	1352	40	**20 x 102**
20	10		115	38,4	17,2	660	23,0	883	34,5	1324	47	**20 x 115**
20	10		127	34,1	19,0	647	25,4	866	38,1	1299	52	**20 x 127**
20	10		139	31,0	20,9	648	27,8	862	41,7	1293	57	**20 x 139**
20	10		152	28,2	22,8	642	30,4	857	45,6	1285	62	**20 x 152**
20	10		305	15,0	45,7	685	61,0	915	91,5	1372	121	**20 x 305**

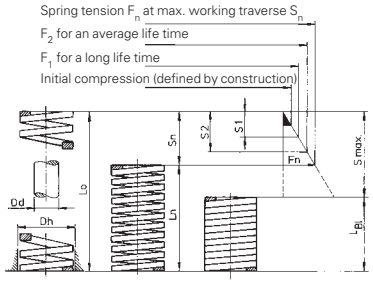
Add size to order number

Order-no. **SZ 8030.** □ x □

Tube Ø D_h^{H15}	Rod Ø D_{dh15}	Wire ▱	Unloaded length L_0	Spring coefficient in N/mm c ± 10%	long life s_1 = 15% in mm	F_1 in N	medium life s_2 = 20% in mm	F_2 in N	max. working traverse s_n = 30% in mm	F_n in N	max. travel stroke s_{max} ca.	
25	12,5	5,6x4,1	25	375,0	3,7	1387	5,0	1875	7,5	2812	9	**25 x 025**
25	12,5		32	297,0	4,8	1425	6,4	1900	9,6	2851	11	**25 x 032**
25	12,5		38	219,0	5,7	1248	7,6	1664	11,4	2496	14	**25 x 038**
25	12,5		44	187,0	6,6	1234	8,8	1645	13,2	2468	16	**25 x 044**
25	12,5		51	156,0	7,6	1185	10,2	1591	15,3	2386	19	**25 x 051**
25	12,5		64	123,0	9,6	1180	12,8	1574	19,2	2361	26	**25 x 064**
25	12,5		76	99,0	11,4	1128	15,2	1504	22,8	2257	29	**25 x 076**
25	12,5		89	84,0	13,3	1117	17,8	1495	26,7	2242	35	**25 x 089**
25	12,5		102	73,0	15,3	1116	20,4	1489	30,6	2233	39	**25 x 102**
25	12,5		115	65,0	17,2	1118	23,0	1495	34,5	2242	45	**25 x 115**
25	12,5		127	57,7	19,0	1096	25,4	1465	38,1	2198	48	**25 x 127**
25	12,5		139	52,7	20,9	1101	27,8	1465	41,7	2198	54	**25 x 139**
25	12,5		152	47,8	22,8	1089	30,4	1453	45,6	2179	60	**25 x 152**
25	12,5		178	41,0	26,7	1094	35,6	1459	53,4	2189	67	**25 x 178**
25	12,5		203	35,8	30,4	1088	40,6	1453	60,9	2180	80	**25 x 203**
25	12,5		305	22,9	45,7	1046	61,0	1396	91,5	2095	119	**25 x 305**
32	16	6,9x5,3	38	388,0	5,7	2111	7,6	2948	11,4	4423	13	**32 x 038**
32	16		44	324,0	6,6	2138	8,8	2851	13,2	4276	16	**32 x 044**
32	16		51	272,0	7,6	2067	10,2	2774	15,3	4161	18	**32 x 051**
32	16		64	212,0	9,6	2035	12,8	2713	19,2	4070	23	**32 x 064**
32	16		76	172,0	11,4	1960	15,2	2614	22,8	3921	27	**32 x 076**
32	16		89	141,0	13,3	1875	17,8	2509	26,7	3764	33	**32 x 089**
32	16		102	122,0	15,3	1866	20,4	2488	30,6	3733	39	**32 x 102**
32	16		115	107,0	17,2	1840	23,0	2461	34,5	3691	43	**32 x 115**
32	16		127	93,0	19,0	1767	25,4	2362	38,1	3543	47	**32 x 127**
32	16		139	86,0	20,9	1797	27,8	2391	41,7	3586	51	**32 x 139**
32	16		152	78,0	22,8	1778	30,4	2371	45,6	3556	55	**32 x 152**
32	16		178	67,2	26,7	1794	35,6	2392	53,4	3588	69	**32 x 178**
32	16		203	59,1	30,4	1796	40,6	2399	60,9	3599	81	**32 x 203**
32	16		254	46,4	38,1	1767	50,8	2357	76,2	3535	99	**32 x 254**
32	16		305	38,0	45,7	1736	61,0	2318	91,5	3477	119	**32 x 305**
40	20	8,4x6,2	51	350,0	7,6	2660	10,2	3570	15,3	5355	18	**40 x 051**
40	20		64	269,0	9,6	2582	12,8	3443	19,2	5164	25	**40 x 064**
40	20		76	219,0	11,4	2496	15,2	3328	22,8	4993	30	**40 x 076**
40	20		89	190,0	13,3	2527	17,8	3382	26,7	5073	36	**40 x 089**
40	20		102	163,0	15,3	2493	20,4	3325	30,6	4987	41	**40 x 102**
40	20		115	142,0	17,2	2442	23,0	3266	34,5	4899	47	**40 x 115**
40	20		127	128,0	19,0	2432	25,4	3251	38,1	4876	53	**40 x 127**
40	20		139	115,0	20,9	2404	27,8	3197	41,7	4796	56	**40 x 139**
40	20		152	105,0	22,8	2394	30,4	3192	45,6	4788	62	**40 x 152**
40	20		178	89,0	26,7	2376	35,6	3168	53,4	4752	70	**40 x 178**
40	20		203	77,0	30,4	2340	40,6	3126	60,9	4689	83	**40 x 203**
40	20		254	61,0	38,1	2324	50,8	3098	76,2	4648	101	**40 x 254**
40	20		305	51,0	45,7	2330	61,0	3111	91,5	4666	127	**40 x 305**
50	25	11,3x7,4	64	413,0	9,6	3964	12,8	5286	19,2	7929	26	**50 x 064**
50	25		76	339,0	11,4	3864	15,2	5152	22,8	7729	29	**50 x 076**
50	25		89	288,0	13,3	3830	17,8	5126	26,7	7689	35	**50 x 089**
50	25		102	245,0	15,3	3748	20,4	4998	30,6	7497	41	**50 x 102**
50	25		115	215,0	17,2	3698	23,0	4945	34,5	7417	47	**50 x 115**
50	25		127	192,0	19,0	3648	25,4	4876	38,1	7315	55	**50 x 127**
50	25		139	168,0	20,9	3511	27,8	4670	41,7	7006	61	**50 x 139**
50	25		152	154,0	22,8	3511	30,4	4681	45,6	7022	66	**50 x 152**
50	25		178	134,0	26,7	3577	35,6	4770	53,4	7155	75	**50 x 178**
50	25		203	117,0	30,4	3556	40,6	4750	60,9	7125	87	**50 x 203**
50	25		254	89,0	38,1	3390	50,8	4521	76,2	6781	108	**50 x 254**
50	25		305	73,0	45,7	3336	61,0	4453	91,5	6679	133	**50 x 305**
63	38	12,5x11,0	76	630,0	11,4	7182	15,2	9576	22,8	14364	24	**63 x 076**
63	38		89	485,0	13,3	6450	17,8	8633	26,7	12950	32	**63 x 089**
63	38		102	434,0	15,3	5772	20,4	8854	30,6	13280	36	**63 x 102**
63	38		115	384,0	17,2	5875	23,0	8832	34,5	13248	40	**63 x 115**
63	38		127	349,0	19,0	6631	25,4	8865	38,1	13297	44	**63 x 127**
63	38		152	276,0	22,8	6293	30,4	8390	45,6	12586	56	**63 x 152**
63	38		178	237,0	26,7	6328	35,6	8437	53,4	12656	65	**63 x 178**
63	38		203	210,0	30,4	6384	40,6	8526	60,9	12789	74	**63 x 203**
63	38		254	165,0	38,1	6286	50,8	8382	76,2	12573	94	**63 x 254**
63	38		305	134,0	45,7	6124	61,0	8174	91,5	12261	115	**63 x 305**

System springs SZ 8040

for extra heavy load, colour yellow



ISO 10243

Helical compression springs for extra heavy load

Material: profiled valve-spring steel wire (Cr-V / Cr-Si)

Tolerances similar to DIN 2095

The springs are initial-loaded, the ends are closed and ground square parallel.

Order example: System spring for extra heavy load **SZ 8040**
D_h = 25 mm, L_0 = 76 mm
Add **25 x 076**
Order number **SZ 8040.25 x 076**

Add size to order number

Order no. **SZ 8040.** ☐ x ☐

Tube Ø D_h^{H15}	Rod Ø D_{dh15}	Wire	Unloaded length L_0	Spring coefficient in N/mm c ± 10%	long life s_1 = 15% in mm	F_1 in N	medium life s_2 = 20% in mm	F_2 in N	max. working traverse s_n = 25% in mm	F_n in N	max. travel stroke s_{max} ca.	
10	5	1,9x1,5	25	36,8	3,7	136	5,0	184	6,3	231	9	**10 x 025**
10	5		32	27,9	4,8	133	6,4	178	8,0	223	12	**10 x 032**
10	5		38	23,7	5,7	135	7,6	180	9,5	225	14	**10 x 038**
10	5		44	19,2	6,6	126	8,8	168	11,0	211	17	**10 x 044**
10	5		51	16,5	7,6	125	10,2	168	12,8	211	19	**10 x 051**
10	5		64	13,2	9,6	126	12,8	168	16,0	211	23	**10 x 064**
10	5		76	10,9	11,4	124	15,2	165	19,0	207	30	**10 x 076**
10	5		305	2,6	45,7	118	61,0	158	76,3	198	117	**10 x 305**
12,5	6,3	2,3x2,2	25	58,5	3,7	216	5,0	292	6,3	368	9	**13 x 025**
12,5	6,3		32	43,9	4,8	210	6,4	280	8,0	351	12	**13 x 032**
12,5	6,3		38	36,0	5,7	205	7,6	273	9,5	342	14	**13 x 038**
12,5	6,3		44	30,3	6,6	199	8,8	266	11,0	333	18	**13 x 044**
12,5	6,3		51	26,2	7,6	199	10,2	267	12,8	335	20	**13 x 051**
12,5	6,3		64	21,2	9,6	203	12,8	271	16,0	339	27	**13 x 064**
12,5	6,3		76	17,1	11,4	194	15,2	259	19,0	324	32	**13 x 076**
12,5	6,3		89	14,5	13,3	192	17,8	258	22,3	323	38	**13 x 089**
12,5	6,3		102	12,5	15,3	191	20,4	255	25,5	319	41	**13 x 102**
12,5	6,3		305	4,3	45,7	196	61,0	262	76,3	328	115	**13 x 305**
16	8	3,2x2,7	25	118,0	3,7	436	5,0	590	6,3	743	10	**16 x 025**
16	8		32	89,0	4,8	427	6,4	569	8,0	712	12	**16 x 032**
16	8		38	72,1	5,7	410	7,6	547	9,5	684	14	**16 x 038**
16	8		44	60,9	6,6	401	8,8	535	11,0	669	17	**16 x 044**
16	8		51	52,3	7,6	397	10,2	533	12,8	669	19	**16 x 051**
16	8		64	41,2	9,6	395	12,8	527	16,0	659	25	**16 x 064**
16	8		76	34,1	11,4	388	15,2	518	19,0	647	29	**16 x 076**
16	8		89	29,5	13,3	392	17,8	525	22,3	657	36	**16 x 089**
16	8		102	25,6	15,3	391	20,4	522	25,5	652	38	**16 x 102**
16	8		305	8,4	45,7	383	61,0	512	76,3	640	120	**16 x 305**
20	10	4,1x3,7	25	293,0	3,7	1084	5,0	1465	6,3	1845	7	**20 x 025**
20	10		32	224,0	4,8	1075	6,4	1433	8,0	1792	10	**20 x 032**
20	10		38	177,0	5,7	1008	7,6	1345	9,5	1681	12	**20 x 038**
20	10		44	149,0	6,6	983	8,8	1311	11,0	1639	14	**20 x 044**
20	10		51	128,0	7,6	972	10,2	1305	12,8	1638	16	**20 x 051**
20	10		64	99,0	9,6	950	12,8	1267	16,0	1584	22	**20 x 064**
20	10		76	81,7	11,4	931	15,2	1241	19,0	1552	25	**20 x 076**
20	10		89	69,5	13,3	924	17,8	1237	22,3	1549	31	**20 x 089**
20	10		102	60,6	15,3	927	20,4	1236	25,5	1545	36	**20 x 102**
20	10		115	53,0	17,2	911	23,0	1219	28,8	1526	42	**20 x 115**
20	10		127	47,5	19,0	902	25,4	1206	31,8	1510	43	**20 x 127**
20	10		139	43,0	20,9	899	27,8	1195	34,8	1496	48	**20 x 139**
20	10		152	39,0	22,8	889	30,4	1185	38,4	1497	52	**20 x 152**
20	10		305	21,2	45,7	968	61,0	1293	76,3	1617	105	**20 x 305**

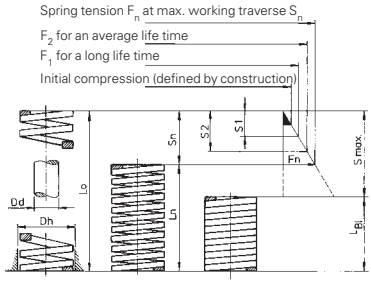
Add size to order number

Order no. **SZ 8040.** □ x □

Tube Ø D_h^{H15}	Rod Ø D_{dh15}	Wire	Unloaded length L_0	Spring coefficient in N/mm c ± 10%	long life s_1 = 15% in mm	F_1 in N	medium life s_2 = 20% in mm	F_2 in N	max. working traverse s_n = 25% in mm	F_n in N	max. travel stroke s_{max} ca.	
25	12,5	5,6x4,6	32	374,4	4,8	1797	6,4	2396	8,0	2995	11	**25 x 032**
25	12,5		38	346,0	5,7	1972	7,6	2629	9,5	3287	13	**25 x 038**
25	12,5		44	244,0	6,6	1610	8,8	2147	11,0	2684	16	**25 x 044**
25	12,5		51	207,5	7,6	1577	10,2	2116	12,8	2656	18	**25 x 051**
25	12,5		64	161,0	9,6	1545	12,8	2060	16,0	2576	23	**25 x 064**
25	12,5		76	130,8	11,4	1491	15,2	1988	19,0	2485	26	**25 x 076**
25	12,5		89	110,5	13,3	1469	17,8	1966	22,3	2464	31	**25 x 089**
25	12,5		102	96,3	15,3	1473	20,4	1964	25,5	2455	36	**25 x 102**
25	12,5		115	85,7	17,2	1474	23,0	1971	28,8	2468	41	**25 x 115**
25	12,5		127	76,3	19,0	1449	25,4	1938	31,8	2426	47	**25 x 127**
25	12,5		152	63,5	22,8	1447	30,4	1930	38,0	2413	54	**25 x 152**
25	12,5		178	53,9	26,7	1439	35,6	1918	44,5	2398	63	**25 x 178**
25	12,5		203	47,0	30,4	1428	40,6	1908	50,8	2387	72	**25 x 203**
25	12,5		305	30,9	45,7	1412	61,0	1884	76,3	2357	113	**25 x 305**
32	16	7,2x5,6	38	528,2	5,7	3010	7,6	4014	9,5	5017	12	**32 x 038**
32	16		44	424,4	6,6	2810	8,8	3734	11,0	4668	15	**32 x 044**
32	16		51	353,0	7,6	2682	10,2	3600	12,8	4518	17	**32 x 051**
32	16		64	269,2	9,6	2584	12,8	3445	16,0	4307	22	**32 x 064**
32	16		76	218,5	11,4	2490	15,2	3321	19,0	4151	25	**32 x 076**
32	16		89	180,3	13,3	2397	17,8	3209	22,3	4020	33	**32 x 089**
32	16		102	155,0	15,3	2371	20,4	3162	25,5	3952	36	**32 x 102**
32	16		115	140,0	17,2	2408	23,0	3220	28,8	4032	42	**32 x 115**
32	16		127	124,0	19,0	2356	25,4	3149	31,8	3943	46	**32 x 127**
32	16		152	102,0	22,8	2325	30,4	3100	38,0	3876	56	**32 x 152**
32	16		178	88,2	26,7	2354	35,6	3139	44,5	3924	64	**32 x 178**
32	16		203	76,0	30,4	2310	40,6	3085	50,8	3860	71	**32 x 203**
32	16		254	60,8	38,1	2316	50,8	3088	63,5	3860	90	**32 x 254**
32	16		305	49,0	45,7	2239	61,0	2989	76,3	3738	103	**32 x 305**
40	20	8,7x7,3	51	628,0	7,6	4772	10,2	6405	12,8	8038	17	**40 x 051**
40	20		64	487,0	9,6	4675	12,8	6233	16,0	7792	23	**40 x 064**
40	20		76	379,0	11,4	4320	15,2	5760	19,0	7201	27	**40 x 076**
40	20		89	321,0	13,3	4269	17,8	5713	22,3	7158	31	**40 x 089**
40	20		102	281,0	15,3	4299	20,4	5732	25,5	7165	36	**40 x 102**
40	20		115	245,0	17,2	4214	23,0	5635	28,8	7056	40	**40 x 115**
40	20		127	221,0	19,0	4199	25,4	5613	31,8	7027	44	**40 x 127**
40	20		139	202,0	20,9	4222	27,8	5616	34,8	7030	52	**40 x 139**
40	20		152	168,0	22,8	3830	30,4	5107	38,0	6384	56	**40 x 152**
40	20		178	140,0	26,7	3738	35,6	4984	44,5	6230	61	**40 x 178**
40	20		203	132,0	30,4	4012	40,6	5359	50,8	6705	73	**40 x 203**
40	20		254	107,0	38,1	4076	50,8	5435	63,5	6794	93	**40 x 254**
40	20		305	87,8	45,7	4012	61,0	5355	76,3	6699	106	**40 x 305**
50	25	11,4x9,1	64	709,0	9,6	6806	12,8	9075	16,0	11344	21	**50 x 064**
50	25		76	572,0	11,4	6520	15,2	8694	19,0	10868	25	**50 x 076**
50	25		89	475,0	13,3	6317	17,8	8455	22,3	10592	28	**50 x 089**
50	25		102	405,0	15,3	6196	20,4	8262	25,5	10327	33	**50 x 102**
50	25		115	352,0	17,2	6054	23,0	8096	28,8	10137	38	**50 x 115**
50	25		127	316,0	19,0	6004	25,4	8026	31,8	10048	43	**50 x 127**
50	25		139	289,0	20,9	6040	27,8	8034	34,8	10057	47	**50 x 139**
50	25		152	239,0	22,8	5449	30,4	7265	38,0	9082	53	**50 x 152**
50	25		178	226,0	26,7	6034	35,6	8045	44,5	10057	60	**50 x 178**
50	25		203	187,0	30,4	5684	40,6	7592	50,8	9499	71	**50 x 203**
50	25		254	153,0	38,1	5829	50,8	7772	63,5	9715	91	**50 x 254**
50	25		305	127,0	45,7	5803	61,0	7747	76,3	9690	106	**50 x 305**
63	38	13,3x11,8	76	842,0	11,4	9599	15,2	12798	19,0	15998	24	**63 x 076**
63	38		89	726,0	13,3	9656	17,8	12923	22,3	16190	28	**63 x 089**
63	38		102	656,0	15,3	10037	20,4	13382	25,5	16728	31	**63 x 102**
63	38		115	534,0	17,2	9185	23,0	12282	28,8	15379	38	**63 x 115**
63	38		127	480,0	19,0	9120	25,4	12192	31,8	15264	42	**63 x 127**
63	38		152	396,0	22,8	9029	30,4	12038	38,0	15048	51	**63 x 152**
63	38		178	335,0	26,7	8945	35,6	11926	44,5	14908	60	**63 x 178**
63	38		203	297,0	30,4	9029	40,6	12058	50,8	15088	68	**63 x 203**
63	38		254	235,0	38,1	8954	50,8	11938	63,5	14923	85	**63 x 254**
63	38		305	194,0	45,7	8866	61,0	11834	76,3	14802	103	**63 x 305**

System springs SZ 8045

for extra heavy loads, colour brown



Screw pressure springs for extra heavy loads

Material: Profiled valve-spring steel wire (Cr-V / Cr-Si)

Tolerances similar to DIN 2095.

The springs are initial-loaded, the ends are closed and ground square parallel.

Order example: System spring for extra heavy load **SZ 8045**
D_h = 25 mm, L_0 = 89 mm
Add **25 x 089**
Order number **SZ 8045.25 x 089**

Add size to order number

Order no. **SZ 8045.** ☐ x ☐

Tube Ø D_h^{H15}	Rod Ø D_{dh15}	Wire ▱	Unloaded length L_0	Spring coefficient in N/mm c ± 10%	long life s_1 = 7% in mm	F_1 in N	medium life s_2 = 10% in mm	F_2 in N	max. working traverse s_n = 15% in mm	F_n in N	max. travel stroke s_{max} ca.	
10	5	2,2 x 2,7	25	167	1,8	300	2,5	418	3,8	626	5	**10 x 025**
10	5		32	130	2,2	286	3,2	416	4,8	624	6	**10 x 032**
10	5		38	105	2,7	284	3,8	399	5,7	599	7	**10 x 038**
10	5		44	86	3,1	267	4,4	378	6,6	568	8	**10 x 044**
10	5		51	79	3,6	284	5,1	403	7,7	604	9	**10 x 051**
10	5		64	62	4,5	279	6,4	397	9,6	595	11	**10 x 064**
10	5		76	51	5,3	270	7,6	388	11,4	581	14	**10 x 076**
12,5	6,3	2,8 x 3,4	25	288	1,8	518	2,5	720	3,8	1080	5	**13 x 025**
12,5	6,3		32	216	2,2	475	3,2	691	4,8	1037	6	**13 x 032**
12,5	6,3		38	176	2,7	475	3,8	669	5,7	1003	7	**13 x 038**
12,5	6,3		44	149	3,1	462	4,4	656	6,6	983	8	**13 x 044**
12,5	6,3		51	128	3,6	461	5,1	653	7,7	979	9	**13 x 051**
12,5	6,3		64	100	4,5	450	6,4	640	9,6	960	11	**13 x 064**
12,5	6,3		76	84	5,3	445	7,6	638	11,4	958	14	**13 x 076**
12,5	6,3		89	71	6,2	440	8,9	632	13,4	948	16	**13 x 089**
12,5	6,3		102	61	7,1	433	10,2	622	15,3	933	19	**13 x 102**
16	8	3,45 x 4,6	32	449	2,2	988	3,2	1437	4,8	2155	6	**16 x 032**
16	8		38	363	2,6	944	3,8	1379	5,7	2069	7	**16 x 038**
16	8		44	309	3,1	958	4,4	1360	6,6	2039	8	**16 x 044**
16	8		51	256	3,6	922	5,1	1306	7,7	1958	9	**16 x 051**
16	8		64	203	4,5	914	6,4	1299	9,6	1949	11	**16 x 064**
16	8		76	166	5,3	880	7,6	1262	11,4	1892	14	**16 x 076**
16	8		89	139	6,2	862	8,9	1237	13,4	1856	16	**16 x 089**
16	8		102	114	7,1	809	10,2	1163	15,3	1744	19	**16 x 102**
16	8		115	105	8,1	851	11,5	1208	17,3	1811	22	**16 x 115**
16	8		127	94	8,9	837	12,7	1194	19,1	1791	25	**16 x 127**
16	8		152	69	10,6	731	15,2	1049	22,8	1573	34	**16 x 152**
16	8		305	37	21,4	792	30,5	1129	45,8	1693	70	**16 x 305**
20	10	4,05 x 5,9	44	452	3,1	1401	4,4	1989	6,6	2983	8	**20 x 044**
20	10		51	378	3,6	1361	5,1	1928	7,7	2892	10	**20 x 051**
20	10		64	301	4,5	1355	6,4	1926	9,6	2890	13	**20 x 064**
20	10		76	247	5,3	1309	7,6	1877	11,4	2816	16	**20 x 076**
20	10		89	208	6,2	1290	8,9	1851	13,4	2777	19	**20 x 089**
20	10		102	188	7,1	1335	10,2	1918	15,3	2876	21	**20 x 102**
20	10		115	159	8,1	1288	11,5	1829	17,3	2743	24	**20 x 115**
20	10		127	146	8,9	1299	12,7	1854	19,1	2781	26	**20 x 127**
20	10		152	91	10,6	965	15,2	1383	22,8	2075	45	**20 x 152**
20	10		305	60	21,4	1284	30,5	1830	45,8	2745	70	**20 x 305**

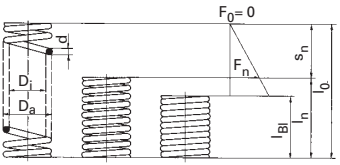
Add
size to
order number

Order no. **SZ 8045.** □ x □

Tube Ø D_h^{H15}	Rod Ø D_{dh15}	Wire	Unloaded length L_0	Spring coefficient in N/mm c ± 10%	long life s_1 = 7% in mm	F_1 in N	medium life s_2 = 10% in mm	F_2 in N	max. working traverse s_n = 15% in mm	F_n in N	max. travel stroke s_{max} ca.	
25	12,5	5,7x7,4	44	1158	3,1	3590	4,4	5095	6,6	7643	8	**25 x 044**
25	12,5		51	933	3,6	3359	5,1	4758	7,6	7091	10	**25 x 051**
25	12,5		64	644	4,5	2898	6,4	4122	9,6	6182	13	**25 x 064**
25	12,5		76	556	5,3	2947	7,6	4226	11,4	6338	16	**25 x 076**
25	12,5		89	462	6,2	2864	8,9	4112	13,4	6191	20	**25 x 089**
25	12,5		102	390	7,1	2769	10,2	3978	15,3	5967	23	**25 x 102**
25	12,5		115	360	8,1	2916	11,5	4140	17,3	6228	26	**25 x 115**
25	12,5		127	336	8,9	2990	12,7	4267	19,1	6418	28	**25 x 127**
25	12,5		152	248	10,6	2629	15,2	3770	22,8	5654	34	**25 x 152**
25	12,5		178	220	12,5	2750	17,8	3916	26,7	5874	39	**25 x 178**
25	12,5		203	199	14,2	2826	20,3	4040	30,5	5313	45	**25 x 203**
25	12,5		305	134	21,4	2868	30,5	4087	45,8	6137	63	**25 x 305**
32	16	7,4x8,8	44	1300	3,1	4030	4,4	5720	6,6	8580	8	**32 x 044**
32	16		51	1150	3,6	4140	5,1	5864	7,6	8740	11	**32 x 051**
32	16		64	887	4,5	3992	6,4	5677	9,6	8515	14	**32 x 064**
32	16		76	705	5,3	3737	7,6	5358	11,4	8037	17	**32 x 076**
32	16		89	594	6,2	3683	8,9	5287	13,4	7960	21	**32 x 089**
32	16		102	520	7,1	3692	10,2	5304	15,3	7956	23	**32 x 102**
32	16		115	465	8,1	3767	11,5	5348	17,3	8045	25	**32 x 115**
32	16		127	413	8,9	3676	12,7	5245	19,1	7888	30	**32 x 127**
32	16		152	348	10,6	3689	15,2	5290	22,8	7934	35	**32 x 152**
32	16		178	294	12,5	3675	17,8	5233	26,7	7850	41	**32 x 178**
32	16		203	256	14,2	3635	20,3	5197	30,5	7808	47	**32 x 203**
32	16		254	201	17,8	3578	25,4	5105	38,1	7658	58	**32 x 254**
32	16		305	168	21,4	3595	30,5	5124	45,8	7694	70	**32 x 305**
40	20	8,7x10,6	64	1228	4,5	5526	6,4	7859	9,6	11789	13	**40 x 064**
40	20		76	1017	5,3	5390	7,6	7729	11,4	11594	16	**40 x 076**
40	20		89	880	6,2	5456	8,9	7832	13,4	11792	20	**40 x 089**
40	20		102	762	7,1	5410	10,2	7772	15,3	11659	23	**40 x 102**
40	20		115	679	8,1	5500	11,5	7809	17,3	11747	26	**40 x 115**
40	20		127	622	8,9	5536	12,7	7899	19,1	11880	28	**40 x 127**
40	20		152	509	10,6	5395	15,2	7737	22,8	11605	36	**40 x 152**
40	20		178	429	12,5	5363	17,8	7636	26,7	11454	43	**40 x 178**
40	20		203	374	14,2	5311	20,3	7592	30,5	11407	49	**40 x 203**
40	20		254	296	17,6	5269	25,4	7518	38,1	11278	62	**40 x 254**
40	20		305	246	21,4	5264	30,5	7503	45,8	11267	75	**40 x 305**
50	25	11,8x13,4	64	1980	4,5	8910	6,4	12672	9,6	19008	11	**50 x 064**
50	25		76	1811	5,3	9598	7,6	13764	11,4	20645	14	**50 x 076**
50	25		89	1410	6,2	8742	8,9	12549	13,4	18894	19	**50 x 089**
50	25		102	1215	7,1	8626	10,2	12393	15,3	18590	22	**50 x 102**
50	25		115	1076	8,1	8716	11,5	12374	17,3	18615	25	**50 x 115**
50	25		127	968	8,9	8615	12,7	12294	19,1	18489	28	**50 x 127**
50	25		152	806	10,6	8444	15,2	12251	22,8	18377	34	**50 x 152**
50	25		178	698	12,5	8725	17,8	12424	26,7	18637	40	**50 x 178**
50	25		203	612	14,2	8690	20,3	12424	30,5	18666	45	**50 x 203**
50	25		254	472	17,8	8402	25,4	11989	38,1	17983	58	**50 x 254**
50	25		305	388	21,4	8303	30,5	11834	45,8	17770	70	**50 x 305**

System Springs

Small series



System springs, small series
(4 load types)
Material: round spring steel wire according to EN 10270-1 DH (grade D)

The springs are initial-loaded, 1 winding closed at both ends and ground square.

Indication: For long working life at an oscillatory loading S_{max} = ca. 0,7 S_n.

Order example: System spring, small series
Light load (green) **SZ 8111**
D_a = 6 mm, l_0 = 25 mm
Extension **06 x 25**
Order number **SZ 8111.06 x 25**

Add size to order number

System springs, small series, light load (green) Order no. **SZ 8111.** ☐ x ☐

D_a	D_i	d	l_0	Spring coefficient (N/mm)	S_n	F_n	Pieces / standard packing	
6	4,7	0,6	16	1,534	10	15	20	**06 x 016**
6	4,7	0,6	25	0,844	15	13	20	**06 x 025**
6	4,7	0,6	38	0,527	23	12	20	**06 x 038**
6	4,7	0,6	51	0,383	31	12	20	**06 x 051**
8	6,2	0,8	16	2,250	9	20	20	**08 x 016**
8	6,2	0,8	25	1,250	14	18	20	**08 x 025**
8	6,2	0,8	38	0,803	21	17	20	**08 x 038**
8	6,2	0,8	51	0,562	28	16	20	**08 x 051**

System springs, small series, medium load (blue) Order no. **SZ 8112.** ☐ x ☐

D_a	D_i	d	l_0	Spring coefficient (N/mm)	S_n	F_n	Pieces / standard packing	
6	4,2	0,8	16	5,430	8,5	46	20	**06 x 016**
6	4,2	0,8	25	3,000	13	39	20	**06 x 025**
6	4,2	0,8	38	1,866	20	37	20	**06 x 038**
6	4,2	0,8	51	1,537	27	41	20	**06 x 051**
8	5,8	1,0	16	7,470	9	67	20	**08 x 016**
8	5,8	1,0	25	3,730	13	48	20	**08 x 025**
8	5,8	1,0	38	2,300	20	46	20	**08 x 038**
8	5,8	1,0	51	1,660	26	43	20	**08 x 051**

System springs, small series, heavy load (red) Order no. **SZ 8113** ☐ x ☐

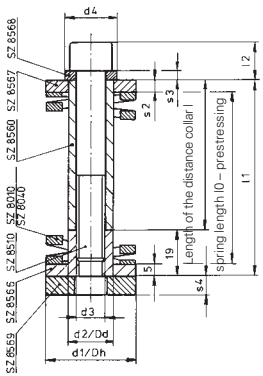
D_a	D_i	d	l_0	Spring coefficient (N/mm)	S_n	F_n	Pieces / standard packing	
6	3,9	1,0	16	16,400	8	131	20	**06 x 016**
6	3,9	1,0	25	8,450	12	109	20	**06 x 025**
6	3,9	1,0	38	5,200	19	111	20	**06 x 038**
6	3,9	1,0	51	3,755	25	103	20	**06 x 051**
8	5,5	1,2	16	16,900	8	135	20	**08 x 016**
8	5,5	1,2	25	9,110	11	93	20	**08 x 025**
8	5,5	1,2	38	5,857	17	88	20	**08 x 038**
8	5,5	1,2	51	4,100	22	83	20	**08 x 051**

System springs, small series, extra heavy load (yellow) Order no. **SZ 8114.** ☐ x ☐

D_a	D_i	d	l_0	Spring coefficient (N/mm)	S_n	F_n	Pieces / standard packing	
6	3,5	1,2	16	38,440	6	231	20	**06 x 016**
6	3,5	1,2	25	21,350	10	214	20	**06 x 025**
6	3,5	1,2	38	13,730	16	220	20	**06 x 038**
6	3,5	1,2	51	9,610	19	183	20	**06 x 051**
8	4,8	1,5	16	47,240	6	283	20	**08 x 016**
8	4,8	1,5	25	23,620	8	189	20	**08 x 025**
8	4,8	1,5	38	14,530	12	174	20	**08 x 038**
8	4,8	1,5	51	10,500	16	168	20	**08 x 051**

System spring units SZ 8565

STEINEL NORMALIEN



System spring unit SZ 8565.00
complete, however without spring:

1 cheese-head screw	SZ 8510
1 distance collar	SZ 8560
1 thread disc	SZ 8566
1 mating disc	SZ 8567
1 tightening disc	SZ 8568
1 regrinding disc	SZ 8569

System spring unit complete with spring:

SZ 8010	**SZ 8565.10**
SZ 8020	**SZ 8565.20**
SZ 8030	**SZ 8565.30**
SZ 8040	**SZ 8565.40**

Add to order number:
Tube Ø d_1 / D_h x l_1

Add size to order number

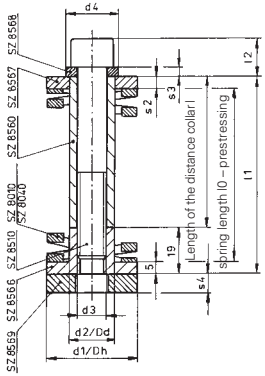
Order no. **SZ 8565.** ☐ x ☐

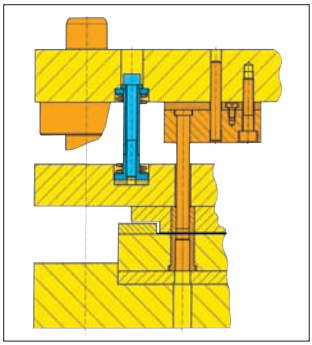
Tube Ø d_1/D_h	Rod Ø d_2/D_d	d_3	d_4	l	l_1	l_2	s_2	s_3	SZ 8510 in SZ 8565 included	SZ 8560 in SZ 8565 included	SZ 8566 in SZ 8565 included	SZ 8567 in SZ 8565 included	SZ 8568 in SZ 8565 included	matchable to that SZ 8010-40	
20	10	M6	13	20	39	9	4	3	06 x 035	10 x 020	20	20	20	20 x 032	**20 x 039**
				30	49				06 x 045	10 x 030				20 x 044	**20 x 049**
				50	69				06 x 070	10 x 050				20 x 064	**20 x 069**
				63	82				06 x 080	10 x 063				20 x 076	**20 x 082**
25	12,5	M8	16	20	39	11	4	3	08 x 035	12 x 020	25	25	25	25 x 032	**25 x 039**
				30	49				08 x 045	12 x 030				25 x 044	**25 x 049**
				50	69				08 x 070	12 x 050				25 x 064	**25 x 069**
				63	82				08 x 080	12 x 063				25 x 076	**25 x 082**
				100	119				08 x 120	12 x 100				25 x 115	**25 x 119**
32	16	M10	19	30	49	13	4	3	10 x 050	16 x 030	32	32	32	32 x 044	**32 x 049**
				50	69				10 x 070	16 x 050				32 x 064	**32 x 069**
				63	82				10 x 080	16 x 063				32 x 076	**32 x 082**
				100	119				10 x 120	16 x 100				32 x 115	**32 x 119**
40	20	M12	22	50	69	16	5	4	12 x 070	20 x 050	40	40	40	40 x 064	**40 x 069**
				63	82				12 x 080	20 x 063				40 x 076	**40 x 082**
				100	119				12 x 120	20 x 100				40 x 115	**40 x 119**
50	25	M16	28	50	69	20	5	4	16 x 070	25 x 050	50	50	50	50 x 064	**50 x 069**
				63	82				16 x 080	25 x 063				50 x 076	**50 x 082**
				100	119				16 x 120	25 x 100				50 x 115	**50 x 119**

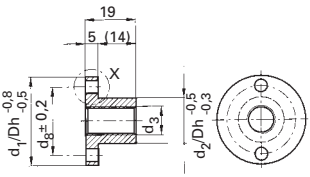
Force stroke table

Spring units SZ 8565.	with system springs SZ 8010 SZ 8020 SZ 8030 SZ 8040	initial stress mm	initial stress %	SZ 8010 green (light load) initial stress tension (N)	max. working traverse	max. spring tension (N)	SZ 8020 blue (medium load) initial stress tension (N)	max. working traverse	max. spring-tension (N)	SZ 8030 red (heavy load) initial stress tension (N)	max. working traverse	max. spring-tension (N)	SZ 8040 yellow (extra heavy load) initial stress tension (N)	max. working traverse	max. spring-tension (N)
20 x 039	20 x 032	2	6	90	10,8	576	145	9,2	813	336	7,6	1612	448	6	1792
20 x 049	20 x 044	4	9	120	13,6	528	190	11,4	731	448	9,2	1478	596	7	1639
20 x 069	20 x 064	4	6	80	21,6	512	129	18,4	723	288	15,2	1384	396	12	1584
20 x 082	20 x 076	3	4	48	27,4	486	75	23,6	667	179	19,8	1361	245	16	1552
25 x 039	25 x 032	2	6	160	10,8	1027	236	9,2	1321	594	7,6	2851	748	6	2995
25 x 049	25 x 044	4	9	211	13,6	931	323	11,4	1244	748	9,2	2468	976	7	2684
25 x 069	25 x 064	4	6	140	21,6	901	212	18,4	1187	492	15,2	2361	644	12	2576
25 x 082	25 x 076	3	4	84	27,4	851	129	23,6	1149	297	19,8	2257	392	16	2485
25 x 119	25 x 115	5	4	93	41,0	860	140	35,3	1128	325	29,5	2242	428	23,8	2468
32 x 049	32 x 044	4	9	318	13,6	1399	632	11,4	2433	1296	9,2	4276	1976	7	4668
32 x 069	32 x 064	4	6	212	21,6	1356	396	18,4	2217	848	15,2	4070	1076	12	4307
32 x 082	32 x 076	3	4	132	27,4	1337	241	23,6	2141	516	19,8	3921	655	16	4151
32 x 119	32 x 115	5	4	145	41,0	1334	257	35,3	2058	535	29,5	3691	700	23,8	4032
40 x 069	40 x 064	5	8	365	20,6	1868	700	17,4	3136	1345	14,2	5164	2435	11	7792
40 x 082	40 x 076	4	5	252	26,4	1915	432	22,6	2872	876	18,8	4993	1516	15	7201
40 x 119	40 x 115	6	5	237	40,0	1821	430	34,3	2893	852	28,5	4899	1470	22,8	7056
50 x 069	50 x 064	5	8	780	20,6	3993	1045	17,4	4681	2065	14,2	7929	3545	11	11344
50 x 082	50 x 076	4	5	500	26,4	3800	672	22,6	4468	1356	18,8	7729	2288	15	10868
50 x 119	50 x 115	6	5	486	40,0	3726	636	34,3	4271	1290	28,5	7417	2112	22,8	10137

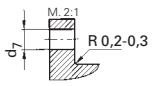
System spring units SZ 8565







Detail X
M. 2:1



Material: C45

SZ 8566

Order example: System spring unit complete, however without spring
SZ 8565.00
Tube Ø d_1 / D_h = 32 mm,
mounting length l_1 = 82 mm
Add **32 x 082**
Order number **SZ 8565.00.32 x 082**

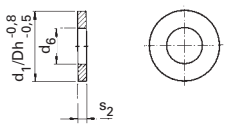
Order example: System spring unit complete, with spring, for example SZ 8040
SZ 8565.40
Tube Ø d_1 / D_h = 32 mm,
mounting length l_1 = 82 mm
Add **32 x 082**
Order number **SZ 8565.40.32 x 082**

Order example for parts:
Thread disc **SZ 8566**
Tube Ø d_1 / D_h = 32 mm,
Add **32**
Order number **SZ 8566.32**

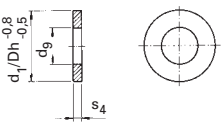
Matchable:

Distance collars	SZ 8560
Cheese head screws	SZ 8510
System springs	SZ 8010
	SZ 8020
	SZ 8030
	SZ 8040

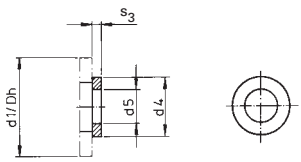
see concerning catalogue page



SZ 8567



SZ 8569



SZ 8568

Add size to order number

Parts for special lengths

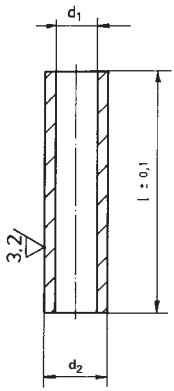
Thread disc	Order no. **SZ 8566.**	☐
Mating disc	Order no. **SZ 8567.**	☐
Tightening disc	Order no. **SZ 8568.**	☐
Regrinding disc	Order no. **SZ 8569.**	☐

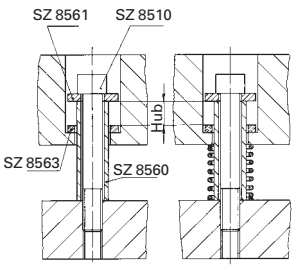
d_1/Dh -0,8 -0,5	d2/Dd -0,5 -0,3	d_3	d_4	d_5	d_6	d_7	d_8	d_9	s_2	s_3	s_4	
20	10,0	M 6	13	6,5	10,5	3,2	14	6,5	4	3	8	**20**
25	12,5	M 8	16	8,5	13,0	4,2	18,5	8,5	4	3	8	**25**
32	16,0	M10	19	10,5	16,5	4,2	25	10,5	4	3	10	**32**
40	20,0	M12	23	12,5	20,5	4,2	30	12,5	5	4	10	**40**
50	25,0	M16	28	16,5	25,5	4,2	40	16,5	5	4	10	**50**

Distance collars

STEINEL NORMALIEN

Add size to order number





Distance collars

Material: 1.0715 (9 S Mn 28 K)
casehardened, hardness 62 – 65 HRC

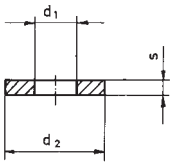
Order example: Distance collar **SZ 8560**
d_2 = 16 mm, l = 40 mm
Add **16 x 040**
Order number **SZ 8560.16 x 040**

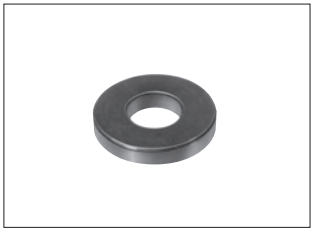
Special size lengths supplyable on request
minimum purchase quantity
Ø10 – Ø16 20 pieces
Ø19 – Ø36 10 pieces

Order no. **SZ 8560.** ☐ x ☐

d_1	d_2	$l^{\pm 0.1}$	matchable SZ 8561	matchable SZ 8563	
7	10	20	6,4	11	**10 x 020**
		30			**10 x 030**
		40			**10 x 040**
		50			**10 x 050**
		63			**10 x 063**
		80			**10 x 080**
9	12,5	20	8,4	14	**12 x 020**
		30			**12 x 030**
		40			**12 x 040**
		50			**12 x 050**
		63			**12 x 063**
		80			**12 x 080**
		100			**12 x 100**
9	13	20	8,4	14	**13 x 020**
		30			**13 x 030**
		40			**13 x 040**
		50			**13 x 050**
		63			**13 x 063**
		80			**13 x 080**
		100			**13 x 100**
11	16	30	10,5	17	**16 x 030**
		40			**16 x 040**
		50			**16 x 050**
		60			**16 x 060**
		63			**16 x 063**
		80			**16 x 080**
		100			**16 x 100**
		125			**16 x 125**
		160			**16 x 160**
		200			**16 x 200**
13	19	30	13	21	**19 x 030**
		40			**19 x 040**
		50			**19 x 050**
		60			**19 x 060**
		63			**19 x 063**
		80			**19 x 080**
		100			**19 x 100**
		125			**19 x 125**
		200			**19 x 200**
13	20	30	13	21	**20 x 030**
		40			**20 x 040**
		50			**20 x 050**
		60			**20 x 060**
		63			**20 x 063**
		80			**20 x 080**
		100			**20 x 100**
		125			**20 x 125**
		200			**20 x 200**
17	25	50	17	26	**25 x 050**
		60			**25 x 060**
		63			**25 x 063**
		70			**25 x 070**
		80			**25 x 080**
		90			**25 x 090**
		100			**25 x 100**
		125			**25 x 125**
		200			**25 x 200**
22	30	70	21	31	**30 x 070**
		80			**30 x 080**
		90			**30 x 090**
		100			**30 x 100**
		120			**30 x 120**
		125			**30 x 125**
		150			**30 x 150**
		200			**30 x 200**
26	36	80	25	37	**36 x 080**
		100			**36 x 100**
		125			**36 x 125**
		150			**36 x 150**
		200			**36 x 200**

Discs





Discs

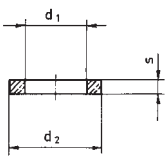
Material: 1.0503 (C 45),
hardness 45 – 50 HRC.

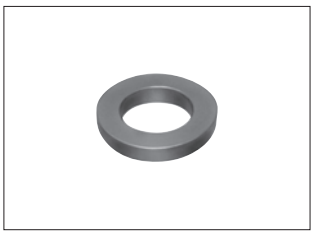
Order example: Disc **SZ 8561**
d_1 = 10,5 mm
Add **10,5**
Order number **SZ 8561.10,5**

Add
size to
order number

Order no. **SZ 8561.**

d_1	d_2	s	
6,4	17	3	**6,4**
8,4	23	4	**8,4**
10,5	26	4	**10,5**
13	30	5	**13**
17	35	6	**17**
21	42	8	**21**
25	46	10	**25**





Damping discs

Material: Polyurethane
on basis Desmodur 15
hardness 90 ± 5 Shore A.

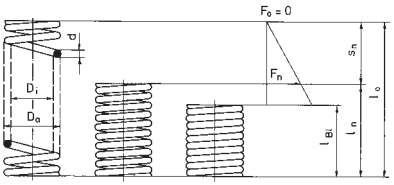
Order example: Damping disc **SZ 8563**
d_1 = 17 mm
Add **17**
Order number **SZ 8563.17**

Add
size to
order number

Order no. **SZ 8563.**

d_1	d_2	s	
11	17	3	**11**
14	23	4	**14**
17	26	4	**17**
21	30	5	**21**
26	35	6	**26**
31	42	6	**31**
37	46	6	**37**

Helical springs SZ 8100



Order example: Helical spiral springs with round cross section **SZ 8100**
D_a = 46 mm, l_0 = 67 mm
Add **46 x 67**
Order number **SZ 8100.46 x 67**

Helical springs with round cross section

Material: Patented drawn spring wire grade C according to DIN 17223

Efficiency rating 2 according to DIN 2095. The springs are initial loaded, 1 winding closed at both ends and ground square.

Indication: For long working life at an oscillatory loading s_{max} = about 0,7 sn.

Springs with round cross section should be used preferably, because they have the most positive attributes.

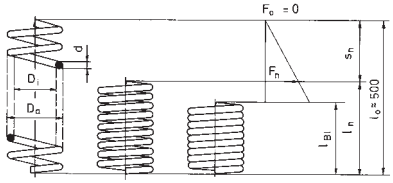
Add size to order number

Order no. **SZ 8100.** ☐ x ☐

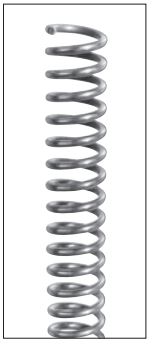
D_a	D_i	d	l_0	l_n	s_n	Spring tension Fn*) (N) ±10%	$l_{Bl.}$	Pieces/standard packing	
10	7	1,5	40	23,9	16,1	130	18	50	**10 x 40**
12	9	1,5	55	25,3	29,7	110	23	50	**12 x 55**
14	10	2	40	22,4	17,6	210	20,5	50	**14 x 40**
14	10	2	50	25	25	250	24	50	**14 x 50**
15	11	2	40	20	20	220	17,5	50	**15 x 40**
17	12,5	2,25	85	41	44	260	35	30	**17 x 85**
17,5	11,5	3	45	31	14	490	29	30	**17,5 x 45**
17,5	11,5	3	50	34	16	480	33	30	**17,5 x 50**
18	10	4	83	65	18	1330	61,5	20	**18 x 83**
19	11	4	35	27	8	1340	26	30	**19 x 35**
19	10	4,5	90	72,4	17,6	1690	70,5	20	**19 x 90**
19,5	14,5	2,5	35	20	15	200	18,5	30	**19,5 x 35**
19,5	13,5	3	40	26	14	450	24,5	30	**19,5 x 40**
20,5	15,5	2,5	95	46,2	48,8	200	37	20	**20,5 x 95**
21	13	4	40	29	11	1140	28	20	**21 x 40**
21,5	15,5	3	45	23,6	21,4	540	22,5	20	**21,5 x 45**
21,5	13,5	4	50	34,4	15,6	1140	32	20	**21,5 x 50**
25	17	4	24	16,8	7,2	950	15,5	30	**25 x 24**
27,8	13,8	7	70	59	11	3680	57	10	**27,8 x 70**
30	22	4	70	36	34	810	34	20	**30 x 70**
30	17	6,5	150	122	28	2850	108	10	**30 x 150**
32	20	6	125	93	32	2110	84	10	**32 x 125**
42	26	8	130	94	36	3830	82	6	**42 x 130**
42	26	8	200	137,7	62,3	3830	125	6	**42 x 200**
46	26	10	67	58	9	5640	53	6	**46 x 67**
47	30	8,5	50	39	11	3630	36	10	**47 x 50**
53	31	11	200	157	43	6620	145	4	**53 x 200**
56	40	8	50	36	14	2080	34	10	**56 x 50**
61	39	11	180	137	43	5100	124	4	**61 x 180**
84	64	10	200	110	90	3750	75	2	**84 x 200**

*) Helical spiral springs arranged according to forces see concerning page

Helical springs SZ 8101



Order example: Helical springs with round cross section, 500 mm long **SZ 8101**
D_a = 18 mm, d = 4 mm
Add **18 x 4**
Order number **SZ 8101.18 x 4**



Helical springs with round cross section, 500 mm long

Material: Patented drawn spring wire grade C according to DIN 17223

Efficiency rating 2 according to DIN 2095. The springs are initial-loaded.

Indication: For long working life at an oscillatory loading s_{max} = ca. 0,7 s_n.

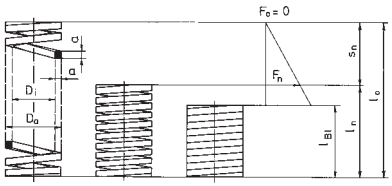
Helical springs 500 mm long are suited for production of any spring lengths. After the cutoff of the desired length, close ends of the springs and grind rectangular to the spring axis. Avoid excessive heating during closing!

Add size to order number

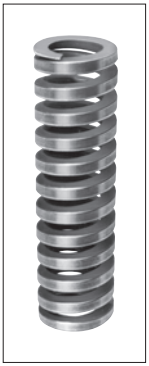
Order no. **SZ 8101.** ☐ x ☐

D_a	D_i	d	l_n	s_n	Spring tension Fn (N)	Pieces/standard packing	
10	7	1,5	300	200	130	5	**10 x 1,5**
12	9	1,5	230	270	110	5	**12 x 1,5**
14	10	2	280	220	210	5	**14 x 2**
15	11	2	250	250	220	5	**15 x 2**
17	12,5	2,25	240	260	260	3	**17 x 2,25**
17,5	11,5	3	344	156	490	3	**17,5 x 3**
18	10	4	392	108	1330	3	**18 x 4**
19	10	4,5	400	100	1690	3	**19 x 4,5**
19,5	14,5	2,5	286	214	200	3	**19,5 x 2,5**
19,5	13,5	3	325	175	450	3	**19,5 x 3**
20,5	15,5	2,5	243	257	200	3	**20,5 x 2,5**
21	13	4	363	137	1140	3	**21 x 4**
21,5	15,5	3	262	238	540	3	**21,5 x 3**
21,5	13,5	4	344	156	1140	3	**21,5 x 4**
25	17	4	350	150	950	3	**25 x 4**
27,8	13,8	7	420	80	3680	3	**27,8 x 7**
30	22	4	257	243	810	3	**30 x 4**
30	17	6,5	407	93	2850	3	**30 x 6,5**
32	20	6	372	128	2110	3	**32 x 6**
42	26	8	362	138	3830	1	**42 x 8**
46	26	10	433	67	5640	1	**46 x 10**
47	30	8,5	390	110	3630	1	**47 x 8,5**
53	31	11	393	107	6620	1	**53 x 11**
56	40	8	360	140	2080	1	**56 x 8**
61	39	11	380	120	5100	1	**61 x 11**

Helical springs SZ 8200



Order example: Helical spring with square cross section **SZ 8200**
D_a = 19,5 mm, l_0 = 45 mm
Add **19,5 x 45**
Order number **SZ 8200.19,5 x 45**



Helical springs with square cross section

Material: Patented drawn spring wire grade C according to DIN 17223.

Tolerances similar to DIN 2095. The springs are initial-loaded, 1 each winding closed at both ends and ground square.

Indication: For long working life at an oscillatory loading s_{max} = ca. 0,7 s_n.

The spring tension of springs with square cross section is higher than that of comparable springs with round cross section.
The working life is nevertheless a little lower, because of the unfavourable stress distribution in the cross section.

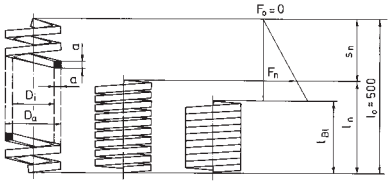
Add size to order number

Order no. **SZ 8200.**

D_a	D_i	a x a	l_0	l_n	s_n	Spring tension Fn*) (N) ±10%	$l_{Bl.}$	Pieces/standard packing	
10	7	1,5	20	12,6	7,4	170	11,5	50	**10 x 20**
11,5	7,5	2	20	14,2	5,8	290	13,5	50	**11,5 x 20**
12	9	1,5	50	23,2	26,8	130	22	30	**12 x 50**
12,5	7,5	2,5	25	21	4	450	19	40	**12,5 x 25**
14	9	2,5	50	37,5	12,5	420	33	30	**14 x 50**
14,5	9,5	2,5	32	21,6	10,4	510	20	30	**14,5 x 32**
17,5	9,5	4	45	37,8	7,2	1570	35,5	30	**17,5 x 45**
19	11	4	50	39,4	10,6	1720	36,5	20	**19 x 50**
19,5	11,5	4	45	35,2	9,8	1570	32,5	20	**19,5 x 45**
21	13	4	45	34	11	1280	32	20	**21 x 45**
23	15	4	83	58,4	24,6	1100	55	10	**23 x 83**
26	14	6	45	40,2	4,8	2950	37	10	**26 x 45**
28	14	7	98	83,5	14,5	7200	82	6	**28 x 98**
30	21	4,5	50	32,5	17,5	1240	30,5	10	**30 x 50**
36	26	5	50	31	19	1340	29	10	**36 x 50**
42	26	8	72	55,5	16,5	4610	53	4	**42 x 72**
60	40	10	120	91	29	5010	84	2	**60 x 120**
70	54	8	60	39	21	1790	36	4	**70 x 60**

*) Helical springs arranged according to forces see concerning page

Helical springs SZ 8201



Order example: Helical springs
with square cross section,
500 mm long **SZ 8201**
D_a = 19 mm, a = 4 mm
Add **19 x 4**
Order number **SZ 8201.19 x 4**

Helical springs with square cross section, 500 mm long

Material: Patented drawn spring wire grade C according to DIN 17223.

Tolerances similar to DIN 2095.
The springs are initial-loaded.

Indication: For long working life at an oscillatory loading s_{max} = ca. 0,7 s_n.

The spring tension of springs with square cross section is higher than that of comparable springs with round cross section.
The working life is nevertheless a little lower, because of the unfavourable stress distribution in the cross section.

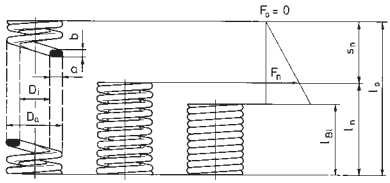
Helical springs 500 mm long are suited to be produced in any spring lengths. After the cutoff of the desired length, lay on ends of the springs and grind rectangular to the spring axis. Avoid excessive heating during closing!

Add
size to
order number

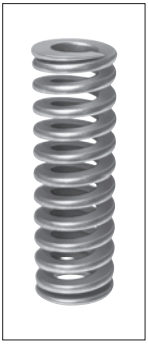
Order no. **SZ 8201.** ☐ x ☐

D_a	D_i	a x a	l_n	s_n	Spring tension Fn (N)	Pieces/standard packing	
10	7	1,5	315	185	170	5	**10 x 1,5**
11,5	7,5	2	355	145	290	5	**11,5 x 2**
12	9	1,5	232	268	130	5	**12 x 1,5**
12,5	7,5	2,5	420	80	450	5	**12,5 x 2,5**
14,5	9,5	2,5	338	162	510	5	**14,5 x 2,5**
19	11	4	394	106	1720	3	**19 x 4**
21	13	4	378	122	1280	3	**21 x 4**
23	15	4	352	148	1100	3	**23 x 4**
28	14	7	426	74	6400	3	**28 x 7**
30	21	4,5	325	175	1240	3	**30 x 4,5**
36	26	5	310	190	1340	3	**36 x 5**
42	26	8	385	115	4610	1	**42 x 8**
60	40	10	380	120	5010	1	**60 x 10**
70	54	8	325	175	1790	1	**70 x 8**

Helical springs SZ 8400



Order example: Helical spring with oval cross section **SZ 8400**
D_a = 32 mm, l_0 = 69 mm
Add **32 x 69**
Order number **SZ 8400.32 x 69**



Helical springs with oval cross section

Material: Patented drawn spring wire grade C according to DIN 17223.

Tolerances similar to DIN 2095. The springs are initial-loaded, 1 each winding closed at both ends and ground square.
Special treatment: blasted with steel balls.

Indication: For long working life at an oscillatory loading s_{max} = ca. 0,7 s_n.

The spring tension of springs with oval cross section is higher than that of comparable springs with round section.
The working life is nevertheless a little lower because of the unfavourable stress distribution in the cross section.

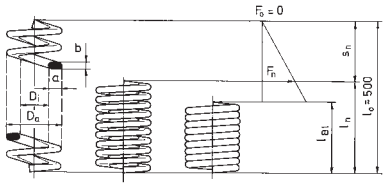
Add size to order number

Order no. **SZ 8400.** ☐ x ☐

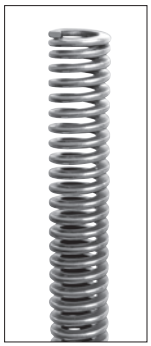
D_a	D_i	a x b	l_0	l_n	s_n	Spring tension Fn*) (N) ±10%	$l_{Bl.}$	Pieces/standard packing	
11	7	2 x 1,25	20	10	10	200	9,5	50	**11 x 20**
12,5	7,5	2,5 x 1,5	20	13	7	270	12	50	**12,5 x 20**
13	9	2	50	20	30	150	18,5	50	**13 x 50**
14	8	3	25	15	10	400	13,5	50	**14 x 25**
15,5	8,5	3,5 x 2,2	25	17	8	740	15,5	40	**15,5 x 25**
17	9	4 x 2	50	32	18	690	30	30	**17 x 50**
17,6	9,6	4 x 2	30	18	12	690	17,5	40	**17,6 x 30**
25	13	6 x 3	54	35	19	1180	32	20	**25 x 54**
25	13	6 x 3	65	42	23	1180	36	10	**25 x 65**
25	13	6 x 3	77	50	27	1180	44	10	**25 x 77**
25	13	6 x 3	99	64	35	1180	52	10	**25 x 99**
25	13	6 x 3	123	79	44	1180	68	10	**25 x123**
32	17	7,5 x 4	69	45	24	2020	43	10	**32 x 69**
32	17	7,5 x 4	84	55	29	2020	50	10	**32 x 84**
32	17	7,5 x 4	98	64	34	2020	60	10	**32 x 98**
32	17	7,5 x 4	127	83	44	2020	74	10	**32 x127**
38	21	8,5 x 5	67	45	22	2950	44	10	**38 x 67**
38	21	8,5 x 5	85	57	28	2950	50	6	**38 x 85**
38	21	8,5 x 5	102	68	34	2950	64	6	**38 x102**
38	21	8,5 x 5	120	80	40	2950	70	6	**38 x120**
38	21	8,5 x 5	147	97	50	2950	88	4	**38 x147**
50	28	11 x 6	100	72	28	3440	60	4	**50 x100**
50	28	11 x 6	150	105	45	3440	87	4	**50 x150**
50	28	11 x 6	193	135	58	3440	118	2	**50 x193**
50	28	11 x 6	230	160	70	3440	130	2	**50,0 x230**

*) Helical springs arranged according to forces see concerning page

Helical springs SZ 8401



Order example: Helical spring with oval cross section, 500 mm long
SZ 8401
D_a = 32 mm, a = 7,5 mm, b = 4 mm
Add **32 x 7,5 x 4**
Order number **SZ 8401.32 x 7,5 x 4**



Helical springs with oval cross section, 500 mm long

Material: Patented drawn spring wire grade C according to DIN 17223.

Tolerances similar to DIN 2095.
The springs are initial-loaded.
Special treatment: blasted with steel balls.

Indication: For long working life at an oscillatory loading s_{max} = ca. 0,7 s_n.

The spring tension of springs with oval cross section is higher than that of comparable springs with round section. The working life is nevertheless a little lower because of the unfavourable stress distribution in the cross section.

Helical springs 500 mm long are suited to be produced in any spring lengths. After the cutoff of the desired length, lay on ends of the springs and grind rectangular to the spring axis. Avoid excessive heating during closing!

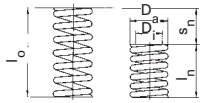
Add size to order number

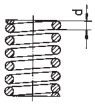
Order no. **SZ 8401.** ☐ x ☐ x ☐

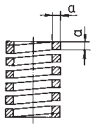
D_a	D_i	a x b	l_n	s_n	Spring tension Fn (N)	Pieces/standard packing	
11	7	2 x 1,25	250	250	200	5	**11 x 2 x 1,25**
13	9	2 x 1,25	200	300	150	5	**13 x 2 x 1,25**
14	8	3 x 1,6	300	200	400	5	**14 x 3 x 1,6**
15,5	8,5	3,5 x 2,2	340	160	740	3	**15,5 x 3,5 x 2,2**
17	9	4 x 2	320	180	690	3	**17 x 4 x 2**
25	13	6 x 3	324	176	1180	3	**25 x 6 x 3**
32	17	7,5 x 4	326	174	2020	3	**32 x 7,5 x 4**
38	21	8,5 x 5	333	167	2950	3	**38 x 8,5 x 5**
50	28	11 x 6	350	150	3440	1	**50 x 11 x 6**

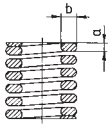
Helical springs SZ 8100, SZ 8200, SZ 8400

arranged according to forces





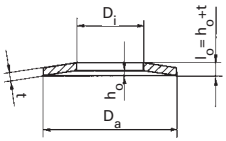




							Order no.	SZ 8100. ☐ x ☐		SZ 8200. ☐ x ☐		SZ 8400. ☐ x ☐
Spring tension Fn (N)	D_a	D_i	l_0	l_n	s_n	d		a x a			a x b	
110	12	9	55	25,3	29,7	1,5	**12 x 55**	-		-	-	-
130	10	7	40	23,9	16,1	1,5	**10 x 40**					
130	12	9	50	23,2	26,8	-	-	1,5 x 1,5	**12 x 50**		-	-
150	13	9	50	20	30	-	-	-		-	2 x	**13 x 50**
170	10	7	20	12,6	7,4	-	-	1,5 x 1,5	**10 x 20**		-	-
200	11	7	20	10	10	-	-	-		-	2 x	**11 x 20**
200	19,5	14,5	35	20	15	2,5	**19,5 x 35**	-		-	-	-
200	20,5	15,5	95	46,2	48,8	2,5	**20,5 x 95**	-		-	-	-
210	14	10	40	22,4	17,6	2	**14 x 40**	-		-	-	-
220	15	11	40	20	20	2	**15 x 40**	-		-	-	-
250	14	10	50	25	25	2	**14 x 50**	-		-	-	-
260	17	12,5	85	41	44	2,25	**17 x 85**	-		-	-	-
270	12,5	7,5	20	13	7	-	-	-		-	2,5 x	**x 20**
290	11,5	7,5	20	14,2	5,8	-	-	2 x 2	**11,5 x 20**		-	-
400	14	8	25	15	10	-	-	-		-	3 x	**14 x 25**
420	14	9	50	37,5	12,5	-	-	2,5 x 2,5	**14 x 50**		-	-
450	12,5	7,5	25	21	4	-	-	2,5 x 2,5	**12,5 x 25**		-	-
450	19,5	13,5	40	26	14	3	**19,5 x 40**	-		-	-	-
480	17,5	11,5	50	34	16	3	**17,5 x 50**	-		-	-	-
490	17,5	11,5	45	31,	14	3	**17,5 x 45**	-		-	-	-
510	14,5	9,5	32	21,6	10,4	-	-	2,5 x 2,5	**14,5 x 32**		-	-
540	21,5	15,5	45	23,6	21,4	3	**21,5 x 45**	-		-	-	-
690	17	9	50	32	18	-	-	-		-	4 x 2	**17 x 50**
690	17,6	9,6	30	18	12	-	-	-		-	4 x 2	**x 30**
740	15,5	8,5	25	17	8	-	-	-		-	3,5 x	**x 25**
810	30	22	70	36	34	4	**30 x 70**	-		-	-	-
950	25	17	24	16,8	7,2	4	**25 x 24**	-		-	-	-
1100	23	15	83	58,4	24,6	-	-	4 x 4	**23 x 83**		-	-
1140	21	13	40	29	11	4	**21 x 40**	-		-	-	-
1140	21,5	13,5	50	34,4	15,6	4	**21,5 x 50**	-		-	-	-
1180	25	13	54	35	19	-	-	-		-	6 x 3	**25 x 54**
1180	25	13	65	42	23	-	-	-		-	6 x 3	**25 x 65**
1180	25	13	77	50	27	-	-	-		-	6 x 3	**25 x 77**
1180	25	13	99	64	35	-	-	-		-	6 x 3	**25 x 99**
1180	25	13	123	79	44	-	-	-		-	6 x 3	**25 x**
1240	30	21	50	32,5	17,5	-	-	4,5 x 4,5	**30 x 50**		-	-
1280	21	13	45	34	11	-	-	4 x 4	**21 x 45**		-	-
1330	18	10	83	65	18	4	**18 x 83**	-		-	-	-
1340	19	11	35	27	8	4	**19 x 35**	-		-	-	-
1340	36	26	50	31	19	-	-	5 x 5	**36 x 50**		-	-
1570	17,5	9,5	45	37,8	7,2	-	-	4 x 4	**17,5 x 45**		-	-
1570	19,5	11,5	45	35,2	9,8	-	-	4 x 4	**19,5 x 45**		-	-
1690	19,	10	90	72,4	17,6	4,5	**19 x 90**	-		-	-	-
1720	19	11	50	39,4	10,6	-	-	4 x 4	**19 x 50**		-	-
1790	70	54	60	39	21	-	-	8 x 8	**70 x 60**		-	-
2020	32	17	69	45	24	-	-	-		-	7,5 x 4	**32 x 69**
2020	32	17	84	55	29	-	-	-		-	7,5 x 4	**32 x 84**
2020	32	17	98	64	34	-	-	-		-	7,5 x 4	**32 x 98**
2020	32	17	127	83	44	-	-	-		-	7,5 x 4	**32 x**
2080	56	40	50	36	14	8	**56 x 50**	-		-	-	-
2110	32	20	125	93	32	6	**32 x 125**	-		-	-	-
2850	30	17	150	122	28	6,5	**30 x 150**	-		-	-	-
2950	26	14	45	40,2	4,8	-	-	6 x 6	**26 x 45**		-	-
2950	38	21	67	45	22	-	-	-		-	8,5 x 5	**38 x 67**
2950	38	21	85	57	28	-	-	-		-	8,5 x 5	**38 x 85**
2950	38	21	102	68	34	-	-	-		-	8,5 x 5	**38 x**
2950	38	21	120	80	40	-	-	-		-	8,5 x 5	**38 x**
2950	38	21	147	97	50	-	-	-		-	8,5 x 5	**38 x**
3440	50	28	100	72	28	-	-	-		-	11 x 6	**50 x**
3440	50	28	150	105	45	-	-	-		-	11 x 6	**50 x**
3440	50	28	193	135	58	-	-	-		-	11 x 6	**50 x**
3440	50	28	230	160	70	-	-	-		-	11 x 6	**50 x**
3630	47	30	50	39	11	8,5	**47 x 50**	-		-	-	-
3680	27,8	13,8	70	59	11	7	**27,8 x 70**	-		-	-	-
3750	84	64	200	110	90	10	**84 x 200**	-		-	-	-
3830	42	26	130	94	36	8	**42 x 130**	-		-	-	-
3830	42	26	200	137,7	62,3	8	**42 x 200**	-		-	-	-
4610	42	26	72	55,5	16,5	-	-	8 x 8	**42 x 72**		-	-
5010	60	40	120	91	29	-	-	10 x 10	**60 x 120**		-	-
5100	61	39	180	137	43	11	**61 x 180**	-		-	-	-
5300	28	14	98	83,5	14,5	-	-	7 x 7	**28 x 98**		-	-
5640	46	26	67	58	9	10	**46 x 67**	-		-	-	-
6620	53	31	200	157	43	11	**53 x 200**	-		-	-	-

Disc springs SZ 8300

STEINEL NORMALIEN



DIN 2093, column A and B
sizes in parenthese are not according to DIN.

Note:
F = spring tension (N)
a = travel stroke (mm)

Order example: Disc spring **SZ 8300**
D_a = 25 mm, D_i = 12,2 mm, t = 1,5 mm
Add **25 x 12,2 x 1,5**
Order number **SZ 8300.25 x 12,2 x 1,5**

Add size to order number

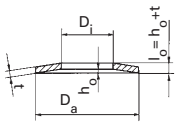
Order no. **SZ 8300**. ☐ x ☐ x ☐

D_a	D_i	t	h_0	l_0	s = 0,2 h_0 F *) (N)	s	s = 0,4 h_0 F *) (N)	s	s = 0,6 h_0 F *) (N)	s	s = 0,75 h_0 F *) (N)	s	Pieces/ standard packing	
8,0	4,2	0,3	0,25	0,55	42,5	0,05	75,6	0,10	102	0,15	119	0,19	100	**08 x 4,2 x 0,3**
8,0	4,2	0,4	0,2	0,6	63,5	0,04	120	0,08	173	0,12	210	0,15	100	**08 x 4,2 x 0,4**
10,0	5,2	0,4	0,3	0,7	72,1	0,06	130	0,12	178	0,18	213	0,23	100	**10 x 5,2 x 0,4**
10,0	5,2	0,5	0,25	0,75	98,5	0,05	187	0,10	268	0,15	329	0,19	100	**10 x 5,2 x 0,5**
12,5	6,2	0,5	0,35	0,85	98,3	0,07	180	0,14	248	0,21	291	0,26	100	**12,5 x 6,2 x 0,5**
12,5	6,2	0,7	0,3	1,0	194	0,06	372	0,12	539	0,18	673	0,23	100	**12,5 x 6,2 x 0,7**
14,0	7,2	0,5	0,4	0,9	98,9	0,08	177	0,16	239	0,24	279	0,30	100	**14 x 7,2 x 0,5**
14,0	7,2	0,8	0,3	1,1	229	0,06	444	0,12	648	0,18	813	0,23	100	**14 x 7,2 x 0,8**
15,0	5,2	0,7	0,4	1,1	174	0,08	326	0,16	461	0,24	555	0,30	100	**(15 x 5,2 x 0,7)**
16,0	8,2	0,6	0,45	1,05	141	0,09	255	0,18	349	0,27	412	0,34	100	**16 x 8,2 x 0,6**
16,0	8,2	0,9	0,35	1,25	293	0,07	566	0,14	825	0,21	1000	0,26	100	**16 x 8,2 x 0,9**
18,0	9,2	0,7	0,5	1,2	191	0,10	348	0,20	480	0,30	572	0,38	100	**18 x 9,2 x 0,7**
18,0	9,2	1,0	0,4	1,4	364	0,08	703	0,16	1020	0,24	1250	0,30	100	**18 x 9,2 x 1,0**
20,0	10,2	0,8	0,55	1,35	249	0,11	456	0,22	631	0,33	745	0,41	100	**20 x 10,2 x 0,8**
20,0	10,2	0,9	0,55	1,45	336	0,11	624	0,22	877	0,33	1040	0,41	100	**(20 x 10,2 x 0,9)**
20,0	10,2	1,1	0,45	1,55	443	0,09	854	0,18	1240	0,27	1530	0,34	100	**20 x 10,2 x 1,1**
22,5	11,2	0,8	0,65	1,45	252	0,13	450	0,26	608	0,39	710	0,49	100	**22,5 x 11,2 x 0,8**
22,5	11,2	1,25	0,5	1,75	560	0,10	1080	0,20	1570	0,30	1950	0,38	100	**22,5 x 11,2 x 1,25**
23,0	12,2	1,25	0,6	1,85	700	0,12	1330	0,24	1920	0,36	2330	0,45	100	**(23 x 12,2 x 1,25)**
25,0	12,2	0,9	0,7	1,6	302	0,14	542	0,28	737	0,42	868	0,53	100	**25 x 12,2 x 0,9**
25,0	12,2	1,5	0,55	2,05	838	0,11	1630	0,22	2380	0,33	2910	0,41	100	**25 x 12,2 x 1,5**
28,0	14,2	1,0	0,8	1,8	392	0,16	702	0,32	949	0,48	1110	0,60	100	**28 x 14,2 x 1,0**
28,0	14,2	1,5	0,65	2,15	836	0,13	1600	0,26	2320	0,39	2850	0,49	100	**28 x 14,2 x 1,5**
31,5	16,3	1,25	0,9	2,15	648	0,18	1180	0,36	1620	0,54	1920	0,68	100	**31,5 x 16,3 x 1,25**
31,5	16,3	1,75	0,7	2,45	1120	0,14	2170	0,28	3160	0,42	3900	0,53	100	**31,5 x 16,3 x 1,75**
35,5	18,3	1,25	1,0	2,25	602	0,20	1080	0,40	1460	0,60	1700	0,75	50	**35,5 x 18,3 x 1,25**
35,5	18,3	2,0	0,8	2,8	1500	0,16	2910	0,32	4230	0,48	5190	0,60	50	**35,5 x 18,3 x 2,0**
40,0	20,4	1,5	1,15	2,65	911	0,23	1640	0,46	2240	0,69	2620	0,86	50	**40 x 20,4 x 1,5**
40,0	20,4	2,25	0,9	3,15	1890	0,18	3640	0,36	5300	0,54	6540	0,68	50	**40 x 20,4 x 2,25**
45,0	22,4	1,75	1,3	3,05	1250	0,26	2260	0,52	3100	0,78	3660	0,98	50	**45 x 22,4 x 1,75**
45,0	22,4	2,5	1,0	3,5	2240	0,20	4320	0,40	6290	0,60	7720	0,75	50	**45 x 22,4 x 2,5**
50,0	25,4	2,0	1,4	3,4	1600	0,28	2910	0,56	4020	0,84	4760	1,05	50	**50 x 25,4 x 2,0**
50,0	25,4	2,5	1,4	3,9	2820	0,28	5300	0,56	7520	0,84	9060	1,05	50	**(50 x 25,4 x 2,5)**
50,0	25,4	3,0	1,1	4,1	3430	0,22	6660	0,44	9740	0,66	12000	0,83	50	**50 x 25,4 x 3,0**
56,0	28,5	2,0	1,6	3,6	1570	0,32	2810	0,64	3810	0,96	4440	1,20	50	**56 x 28,5 x 2,0**
56,0	28,5	3,0	1,3	4,3	3350	0,26	6430	0,52	9320	0,78	11400	0,98	50	**56 x 28,5 x 3,0**
63,0	31	2,5	1,75	4,25	2410	0,35	4400	0,70	6080	1,05	7180	1,31	50	**63 x 31 x 2,5**
63,0	31	3,5	1,4	4,9	4360	0,28	8420	0,56	12300	0,84	15000	1,05	50	**63 x 31 x 3,5**

*) Disc springs arranged according to forces see concerning page. Sizes in parentheses are not according to DIN.

Disc springs SZ 8300

arranged according to forces



Explication:

F = Spring tension (N) of a disc spring respectively a group with s = 0,75 h_0. The named force at two or threefold layer arrangement is the theoretically calculated value. The real data differ because of occuring friction losses.

s = Travel stroke of one disc respectively of a group (0,75 h_0).

l_{01} = Total height of single disc (h_0 + t).

l_{02} = Total height of a single group with twofold layer arrangement (h_0 + 2 · t).

l_{03} = Total height of a disc group threefold layer arrangement (h_0 + 3 · t).



Add size to order number

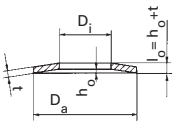
Order no. **SZ 8300.** ☐ x ☐ x ☐

Spring tension Fn (N)	s = 0,75 h_0	D_a	D_i	t	l_{01}	D_a	D_i	t	l_{02}	D_a	D_i	t	l_{03}	
119	0,19	8	4,2	0,3	0,55									**08 x 4,2 x 0,3**
210	0,15	8	4,2	0,4	0,6									**08 x 4,2 x 0,4**
213	0,23	10	5,2	0,4	0,7									**10 x 5,2 x 0,4**
238	0,19					8	4,2	0,3	0,85					**08 x 4,2 x 0,3**
279	0,30	14	7,2	0,5	0,9									**14 x 7,2 x 0,5**
291	0,26	12,5	6,2	0,5	0,85									**12,5 x 6,2 x 0,5**
329	0,19	10	5,2	0,5	0,75									**10 x 5,2 x 0,5**
357	0,19									8	4,2	0,3	1,15	**08 x 4,2 x 0,3**
412	0,34	16	8,2	0,6	1,05									**16 x 8,2 x 0,6**
420	0,15					8	4,2	0,4	1					**08 x 4,2 x 0,4**
426	0,23					10	5,2	0,4	1,1					**10 x 5,2 x 0,4**
555	0,30	15	5,2	0,7	1,1									**15 x 5,2 x 0,7**
558	0,30					14	7,2	0,5	1,4					**14 x 7,2 x 0,5**
572	0,38	18	9,2	0,7	1,2									**18 x 9,2 x 0,7**
582	0,26					12,5	6,2	0,5	1,35					**12,5 x 6,2 x 0,5**
630	0,15									8	4,2	0,4	1,4	**08 x 4,2 x 0,4**
639	0,23									10	5,2	0,4	1,5	**10 x 5,2 x 0,4**
658	0,19					10	5,2	0,5	1,25					**10 x 5,2 x 0,5**
673	0,23	12,5	6,2	0,7	1,0									**12,5 x 6,2 x 0,7**
710	0,49	22,5	11,2	0,8	1,45									**22,5 x 11,2 x 0,8**
745	0,41	20	10,2	0,8	1,35									**20 x 10,2 x 0,8**
813	0,23	14	7,2	0,8	1,1									**14 x 7,2 x 0,8**
824	0,34					16	8,2	0,6	1,65					**16 x 8,2 x 0,6**
837	0,30									14	7,2	0,5	1,9	**14 x 7,2 x 0,5**
868	0,53	25	12,2	0,9	1,6									**25 x 12,2 x 0,9**
873	0,26									12,5	6,2	0,5	1,85	**12,5 x 6,2 x 0,5**
987	0,19									10	5,2	0,5	1,75	**10 x 5,2 x 0,5**
1000	0,26	16	8,2	0,9	1,25									**16 x 8,2 x 0,9**
1040	0,41	20	10,2	0,9	1,45									**20 x 10,2 x 0,9**
1110	0,30					15	5,2	0,7	1,8					**15 x 5,2 x 0,7**
1110	0,60	28	14,2	1,0	1,8									**28 x 14,2 x 1,0**
1144	0,38					18	9,2	0,7	1,9					**18 x 9,2 x 0,7**
1236	0,34									16	8,2	0,6	2,25	**16 x 8,2 x 0,6**
1250	0,30	18	9,2	1,0	1,4									**18 x 9,2 x 1,0**
1346	0,23					12,5	6,2	0,7	1,7					**12,5 x 6,2 x 0,7**
1420	0,49					22,5	11,2	0,8	2,25					**22,5 x 11,2 x 0,8**
1490	0,41					20	10,2	0,8	2,15					**20 x 10,2 x 0,8**
1530	0,34	20	10,2	1,1	1,55									**20,0 x 10,2 x 1,1**

Disc springs SZ 8300

arranged according to forces

STEINEL NORMALIEN



Explication:

F = Spring tension (N) of a disc spring respectively a group with s = 0,75 h_0. The named force at two or threefold layer arrangement is the theoretically calculated value. The real data differ because of occuring friction losses.

s = Travel stroke of one disc respectively of a group (0,75 h_0).

l_{01} = Total height of single disc (h_0 + t).

l_{02} = Total height of a single group with twofold layer arrangement (h_0 + 2 · t).

l_{03} = Total height of a disc group threefold layer arrangement (h_0 + 3 · t).



Add size to order number

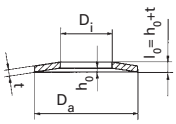
Order no. **SZ 8300.** ☐ x ☐ x ☐

Spring tension Fn (N)	s = 0,75 h_0	D_a	D_i	t	l_{01}	D_a	D_i	t	l_{02}	D_a	D_i	t	l_{03}	
1626	0,23					14	7,2	0,8	1,9					**14 x 7,2 x 0,8**
1665	0,30									15	5,2	0,7	2,5	**15 x 5,2 x 0,7**
1700	0,75	35,5	18,3	1,25	2,25									**35,5 x 18,3 x 1,25**
1716	0,38									18	9,2	0,7	2,6	**18 x 9,2 x 0,7**
1736	0,53					25	12,2	0,9	2,5					**25 x 12,2 x 0,9**
1920	0,68	31,5	16,3	1,25	2,15									**31,5 x 16,3 x 1,25**
1950	0,38	22,5	11,2	1,25	1,75									**22,5 x 11,2 x 1,25**
2000	0,26					16	8,2	0,9	2,15					**16 x 8,2 x 0,9**
2019	0,23									12,5	6,2	0,7	2,4	**12,5 x 6,2 x 0,7**
2080	0,41					20	10,2	0,9	2,35					**20 x 10,2 x 0,9**
2130	0,49									22,5	11,2	0,8	3,05	**22,5 x 11,2 x 0,8**
2220	0,60					28	14,2	1,0	2,8					**28 x 14,2 x 1,0**
2235	0,41									20	10,2	0,8	2,95	**20 x 10,2 x 0,8**
2330	0,45	23	12,2	1,25	1,85									**23 x 12,2 x 1,25**
2439	0,23									14	7,2	0,8	2,7	**14 x 7,2 x 0,80**
2500	0,30					18	9,2	1,0	2,4					**18 x 9,2 x 1,0**
2604	0,53									25	12,2	0,9	3,4	**25 x 12,2 x 0,9**
2620	0,86	40	20,4	1,5	2,65									**40 x 20,4 x 1,5**
2850	0,49	28	14,2	1,5	2,15									**28 x 14,2 x 1,5**
2910	0,41	25	12,2	1,5	2,05									**25 x 12,2 x 1,5**
3000	0,26									16	8,2	0,9	3,05	**16 x 8,2 x 0,9**
3060	0,34					20	10,2	1,1	2,65					**20 x 10,2 x 1,1**
3120	0,41									20	10,2	0,9	3,25	**20 x 10,2 x 0,9**
3330	0,60									28	14,2	1,0	3,8	**28 x 14,2 x 1,0**
3400	0,75					35,5	18,3	1,25	3,5					**35,5 x 18,3 x 1,25**
3660	0,98	45	22,4	1,75	3,05									**45 x 22,4 x 1,75**
3750	0,30									18	9,2	1,0	3,4	**18 x 9,2 x 1,0**
3840	0,68					31,5	16,3	1,25	3,4					**31,5 x 16,3 x 1,25**
3900	0,38					22,5	11,2	1,25	3,0					**22,5 x 11,2 x 1,25**
3900	0,53	31,5	16,3	1,75	2,45									**31,5 x 16,3 x 1,75**
4440	1,20	56	28,5	2,0	3,6									**56 x 28,5 x 2,0**
4590	0,34									20	10,2	1,1	3,75	**20 x 10,2 x 1,1**
4660	0,45					23	12,2	1,25	3,1					**23 x 12,2 x 1,25**
4760	1,05	50	25,4	2,0	3,4									**50 x 25,4 x 2,0**
5100	0,75									35,5	18,3	1,25	4,75	**35,5 x 18,3 x 1,25**
5190	0,60	35,5	18,3	2,0	2,8									**35,5 x 18,3 x 2,0**
5240	0,86					40	20,4	1,5	4,15					**40 x 20,4 x 1,5**
5700	0,49					28	14,2	1,5	3,65					**28 x 14,2 x 1,50**

Disc springs SZ 8300

arranged according to forces

STEINEL® NORMALIEN



Explication:

F = Spring tension (N) of a disc spring respectively a group with s = 0,75 h_0. The named force at two or threefold layer arrangement is the theoretically calculated value. The real data differ because of occuring friction losses.

s = Travel stroke of one disc respectively of a group (0,75 h_0).

l_{01} = Total height of single disc (h_0 + t).

l_{02} = Total height of a single group with twofold layer arrangement (h_0 + 2 · t).

l_{03} = Total height of a disc group threefold layer arrangement (h_0 + 3 · t).



Add size to order number

Order no. **SZ 8300.** ☐ x ☐ x ☐

Spring tension Fn (N)	s = 0,75 h_0	D_a	D_i	t	l_{01}	D_a	D_i	t	l_{02}	D_a	D_i	t	l_{03}	
5760	0,68									31,5	16,3	1,25	4,65	**31,5 x 16,3 x 1,25**
5820	0,41					25	12,2	1,50	3,55					**25 x 12,2 x 1,5**
5850	0,38									22,5	11,2	1,25	4,25	**22,5 x 11,2 x 1,25**
6540	0,68	40	20,4	2,25	3,15									**40 x 20,4 x 2,25**
6990	0,45									23	12,2	1,25	4,35	**23 x 12,2 x 1,25**
7180	1,31	63	31	2,5	4,25									**63 x 31 x 2,5**
7320	0,98					45	22,4	1,75	4,8					**45 x 22,4 x 1,75**
7720	0,75	45	22,4	2,5	3,5									**45 x 22,4 x 2,5**
7800	0,53					31,5	16,3	1,75	4,2					**31,5 x 16,3 x 1,75**
7860	0,86									40	20,4	1,5	5,65	**40 x 20,4 x 1,5**
8550	0,49									28	14,2	1,5	5,15	**28 x 14,2 x 1,5**
8730	0,41									25	12,2	1,5	5,05	**25 x 12,2 x 1,5**
8880	1,20					56	28,5	2,0	5,6					**56 x 28,5 x 2,0**
9060	1,05	50	25,4	2,5	3,9									**50 x 25,4 x 2,5**
9520	1,05					50	25,4	2,0	5,4					**50 x 25,4 x 2,0**
10380	0,60					35,5	18,3	2,0	4,8					**35,5 x 18,3 x 2,0**
10980	0,98									45	22,4	1,75	6,55	**45 x 22,4 x 1,75**
11400	0,98	56	28,5	3,0	4,3									**56 x 28,5 x 3,0**
11700	0,53									31,5	16,3	1,75	5,95	**31,5 x 16,3 x 1,75**
12000	0,83	50	25,4	3,0	4,1									**50 x 25,4 x 3,0**
13080	0,68					40	20,4	2,25	5,4					**40 x 20,4 x 2,25**
13320	1,20									56	28,5	2,0	7,6	**56 x 28,5 x 2,0**
14280	1,05									50	25,4	2,0	7,4	**50 x 25,4 x 2,0**
14360	1,31					63	31	2,5	6,75					**63 x 31 x 2,5**
15000	1,05	63	31	3,5	4,9									**63 x 31 x 3,5**
15440	0,75					45	22,4	2,5	6,00					**45 x 22,4 x 2,5**
15570	0,60									35,5	18,3	2,0	6,8	**35,5 x 18,3 x 2,0**
18120	1,05					50	25,4	2,5	6,40					**50 x 25,4 x 2,5**
19620	0,68									40	20,4	2,25	7,65	**40 x 20,4 x 2,25**
21540	1,31									63	31	2,5	9,25	**63 x 31 x 2,5**
22800	0,98					56	28,5	3,0	7,3					**56 x 28,5 x 3,0**
23160	0,75									45	22,4	2,5	8,5	**45 x 22,4 x 2,5**
24000	0,83					50	25,4	3,0	7,1					**50 x 25,4 x 3,0**
27180	1,05									50	25,4	2,5	8,9	**50 x 25,4 x 2,5**
30000	1,05					63	31	3,5	8,4					**63 x 31 x 3,5**
34200	0,98									56	28,5	3,0	10,3	**56 x 28,5 x 3,0**
36000	0,83									50	25,4	3,0	10,1	**50 x 25,4 x 3,0**
45000	1,05									63	31	3,5	11,9	**63 x 31 x 3,5**

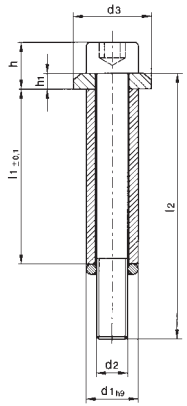
Distance and pass unit SZ 8580

Three-Piece Stripper Bolt Unit
The three-piece stripper bolt unit is used as a holding piece, spring unit, fitting bolt or a distance collar unit.

Design:
Distance collar: Material 9 S Mn 28K
Case-hardened 62 – 65 HRC
Outside diameter ground

Tip:
The three-piece stripper bolt unit is mounted with an o-ring at delivery. Please remove it before installing.

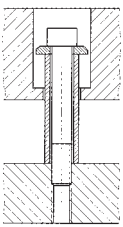
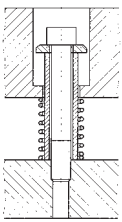
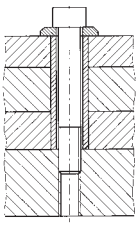
Order example: Three-piece stripper bolt unit complete **SZ 8580**
d_1 = 12 mm, l_1 = 50 mm
Add **12 x 050**
Order number **SZ 8580.12 x 050**



Add size to order number

Order no. **SZ 8580.** □ x □

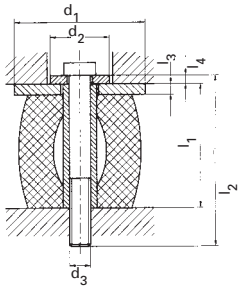
d_1	d_2	d_3	l_1	l_2	h	h_1	
10	M6	15	20	35	10	4	**10 x 020**
			30	45			**10 x 030**
			40	60			**10 x 040**
			50	70			**10 x 050**
			63	80			**10 x 063**
			80	100			**10 x 080**
12	M8	19	20	35	13	5	**12 x 020**
			30	45			**12 x 030**
			40	60			**12 x 040**
			50	70			**12 x 050**
			63	80			**12 x 063**
			80	100			**12 x 080**
			100	120			**12 x 100**
16	M10	23	30	50	15,5	5,5	**16 x 030**
			40	60			**16 x 040**
			50	70			**16 x 050**
			63	80			**16 x 063**
			80	100			**16 x 080**
			100	120			**16 x 100**
			125	150			**16 x 125**
20	M12	27	30	50	19	7	**20 x 030**
			40	60			**20 x 040**
			50	70			**20 x 050**
			63	90			**20 x 063**
			80	100			**20 x 080**
			100	120			**20 x 100**
			125	150			**20 x 125**
25	M16	34	50	80	23	7	**25 x 050**
			63	90			**25 x 063**
			80	110			**25 x 080**
			100	130			**25 x 100**
			125	150			**25 x 125**

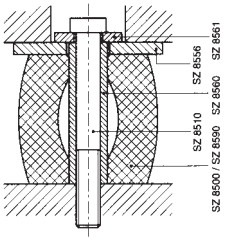




Examples of use

Spring Unit SZ 8526, SZ 8527

for Elastomer Springs





Elastomer spring unit complete

The elastomer spring units can be used for any compression distance / stroke. The spring travel including pre-load is max. 25% to 35% of L_0 of the elastomer spring in use.

The elastomer spring unit complete consists of:
- Elastomer spring SZ 8500 or SZ 8590
- Spring washer SZ 8556
- Disc SZ 8561
- Distance collar SZ 8560
- Cheese head screw SZ 8510

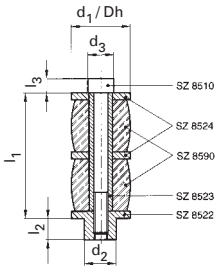
Order example: Elastomer spring unit with rubber spring **SZ 8500**
d_1 = 50mm, l_1 = 63mm
Add: **050 x 063**
Order number **SZ 8526.050 x 063**

Add size to order number

with rubber spring SZ 8500	Order no. **SZ 8526.**	☐ x ☐
with polyurethane spring SZ 8590	Order no. **SZ 8527.**	☐ x ☐

d_1	d_2	d_3	l_1	l_2	l_3	l_4	Elast. spring	
30	17	M 6	20	30	5	3	025 x 020	**030 x 020**
30	17	M 6	30	40	5	3	025 x 032	**030 x 032**
30	17	M 6	40	50	5	3	025 x 040	**030 x 040**
40	23	M 8	30	50	5	4	032 x 032	**040 x 032**
40	23	M 8	40	60	5	4	032 x 040	**040 x 040**
40	23	M 8	50	70	5	4	032 x 050	**040 x 050**
40	23	M 8	63	80	5	4	032 x 063	**040 x 063**
50	23	M 8	30	50	5	4	040 x 032	**050 x 032**
50	23	M 8	40	60	5	4	040 x 040	**050 x 040**
50	23	M 8	50	70	5	4	040 x 050	**050 x 050**
50	23	M 8	63	80	5	4	040 x 063	**050 x 063**
50	23	M 8	80	100	5	4	040 x 080	**050 x 080**
60	26	M10	30	50	6	4	050 x 032	**060 x 032**
60	26	M10	40	60	6	4	050 x 040	**060 x 040**
60	26	M10	50	70	6	4	050 x 050	**060 x 050**
60	26	M10	63	80	6	4	050 x 063	**060 x 063**
60	26	M10	80	100	6	4	050 x 080	**060 x 080**
60	26	M10	100	120	6	4	050 x 100	**060 x 100**
80	26	M10	30	50	6	4	063 x 032	**080 x 032**
80	26	M10	40	60	6	4	063 x 040	**080 x 040**
80	26	M10	50	70	6	4	063 x 050	**080 x 050**
80	26	M10	63	80	6	4	063 x 063	**080 x 063**
80	26	M10	80	100	6	4	063 x 080	**080 x 080**
80	26	M10	100	120	6	4	063 x 100	**080 x 100**
80	26	M10	125	140	6	4	063 x 125	**080 x 125**
100	30	M12	30	50	8	5	080 x 032	**100 x 032**
100	30	M12	40	60	8	5	080 x 040	**100 x 040**
100	30	M12	50	70	8	5	080 x 050	**100 x 050**
100	30	M12	63	80	8	5	080 x 063	**100 x 063**
100	30	M12	80	100	8	5	080 x 080	**100 x 080**
100	30	M12	100	120	8	5	080 x 100	**100 x 100**
100	30	M12	125	140	8	5	080 x 125	**100 x 125**
120	30	M12	30	50	8	5	100 x 032	**120 x 032**
120	30	M12	40	60	8	5	100 x 040	**120 x 040**
120	30	M12	50	70	8	5	100 x 050	**120 x 050**
120	30	M12	63	80	8	5	100 x 063	**120 x 063**
120	30	M12	80	100	8	5	100 x 080	**120 x 080**
120	30	M12	100	120	8	5	100 x 100	**120 x 100**

Elastomer Spring Units
SZ 8520, SZ 8522, SZ 8523, SZ 8524



Elastomer units complete, pre-tensed
The spring units can be used for any compression distance. The spring travel including pre-tension is maximally 25% of L_0 of the elastomer springs SZ 8590 in use.
The spring force is visible on the Force/Travel diagram of SZ 8590.

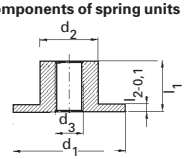
Order example: Spring unit complete, pre-tensed, **SZ 8520.**
Diameter 40 mm
Installation height 83 mm
Add **40 x 083**
Order number **SZ 8520 x 40 x 083**

Add size to order number

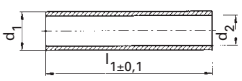
Order no. **SZ 8520.** ☐ x ☐

Tube Ø d_1/D_h	d_2	d_3	l_1	l_2	l_3	SZ 8510 in SZ 8520 included	SZ 8522 in SZ 8520 included	SZ 8523 in SZ 8520 included	SZ 8524 in SZ 8520 included	SZ 8590 in SZ 8520 included	
25	13	10	53	9	6	06 x 060	25	08 x 050	25	020 x 025	**25 x 053**
			67			06 x 080	25	08 x 064	25	020 x 032	**25 x 067**
32	16	13	53	11	8	08 x 060	32	10 x 050	32	025 x 025	**32 x 053**
			67			08 x 080	32	10 x 064	32	025 x 032	**32 x 067**
			83			08 x 090	32	10 x 080	32	025 x 040	**32 x 083**
40	20	16	67	14	10	10 x 080	40	13 x 064	40	032 x 032	**40 x 067**
			83			10 x 090	40	13 x 080	40	032 x 040	**40 x 083**
			103			10 x 110	40	13 x 100	40	032 x 050	**40 x 103**
50	25	16	86	14	10	10 x 090	50	13 x 082	50	040 x 040	**50 x 086**
			106			10 x 120	50	13 x 102	50	040 x 050	**50 x 106**
			132			10 x 140	50	13 x 128	50	040 x 063	**50 x 132**

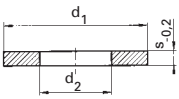
Single components of spring units



Holding socket



Distance tube



Disc

Add size to order number

Order no. **SZ 8522.** ☐

d_1	d_2	d_3	l_1	$l_{2-0,1}$	
25	13	M6	12	3	**25**
32	16	M8	14	3	**32**
40	20	M10	17	3	**40**
50	25	M10	18	4	**50**

Add size to order number

Order no. **SZ 8523.** ☐ x ☐

d_1	d_2	l	
8,0	6,5	50	**08 x 050**
		64	**08 x 064**
10,0	8,5	50	**10 x 050**
		64	**10 x 064**
		80	**10 x 080**
13,0	11,0	64	**13 x 064**
		80	**13 x 080**
		82	**13 x 082**
		100	**13 x 100**
		102	**13 x 102**
		128	**13 x 128**

Add size to order number

Order no. **SZ 8524.** ☐

d_1	d_2	$s_{-0,2}$	
25	8,0	3	**25**
32	10,0	3	**32**
40	13,0	3	**40**
50	13,0	4	**50**

Elastomer springs SZ 8500

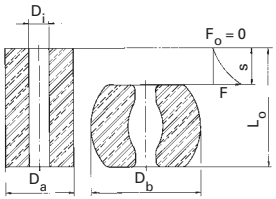
STEINEL NORMALIEN

DIN ISO 10069

Rubber springs

Material: Chloroprene-elastomer (CR)
hardness 70 ± 3 Shore A

Admissible travel stroke = 0,35 L_0
Settling inclination 3 – 5 % von L_0
Rubber springs are qualified for large travel strokes.
Heat resistance up to + 80 °C
short-time up to 120 °C.



Order example: Rubber spring **SZ 8500**
D_a = 32 mm, L_0 = 40 mm
Add **032 x 040**
Order number **SZ 8500.032 x 040**

Add size to order number

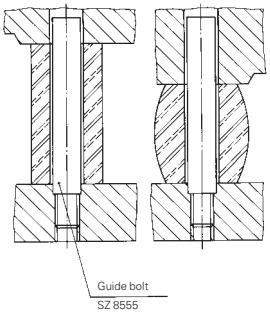
Order no. **SZ 8500.** ☐ x ☐

D_a	D_i	L_0	D_b	D_1	Pieces/standard packing	
16	6,5	12	22	28	10	**016 x 012**
		16			10	**016 x 016**
		20			10	**016 x 020**
		25			10	**016 x 025**
20	8,5	16	27	32	10	**020 x 016**
		20			10	**020 x 020**
		25			10	**020 x 025**
		32			10	**020 x 032**
25	10,5	20	34	36	5	**025 x 020**
		25			5	**025 x 025**
		32			5	**025 x 032**
		40			5	**025 x 040**
32	13,5	32	43	45	5	**032 x 032**
		40			5	**032 x 040**
		50			5	**032 x 050**
		63			5	**032 x 063**
40	13,5	32	54	56	3	**040 x 032**
		40			3	**040 x 040**
		50			3	**040 x 050**
		63			3	**040 x 063**
		80			3	**040 x 080**
50	17	32	68	71	3	**050 x 032**
		40			3	**050 x 040**
		50			3	**050 x 050**
		63			2	**050 x 063**
		80			2	**050 x 080**
		100			2	**050 x 100**
63	17	32	85	90	2	**063 x 032**
		40			2	**063 x 040**
		50			2	**063 x 050**
		63			2	**063 x 063**
		80			1	**063 x 080**
		100			1	**063 x 100**
		125			1	**063 x 125**
80	21	32	108	112	1	**080 x 032**
		40			1	**080 x 040**
		50			1	**080 x 050**
		63			1	**080 x 063**
		80			1	**080 x 080**
		100			1	**080 x 100**
		125			1	**080 x 125**
100	21	32	135	140	1	**100 x 032**
		40			1	**100 x 040**
		50			1	**100 x 050**
		63			1	**100 x 063**
		80			1	**100 x 080**
		100			1	**100 x 100**
		125			1	**100 x 125**
125	27	32	169	180	1	**125 x 032**
		40			1	**125 x 040**
		50			1	**125 x 050**
		63			1	**125 x 063**
		80			1	**125 x 080**
		100			1	**125 x 100**
		125			1	**125 x 125**
		160			1	**125 x 160**

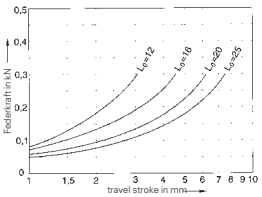
Elastomer springs

Mounting examples

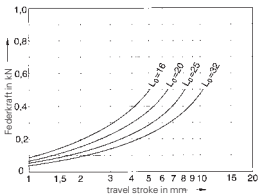
Force – stroke diagrams for rubber springs SZ 8500



Single layer arrangement

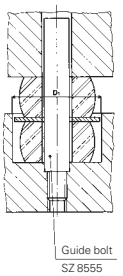


Pic. 1. Spring CR 16

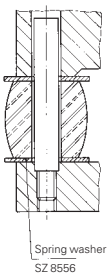


Pic. 2. Spring CR 20

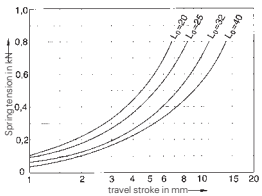
Mounting examples



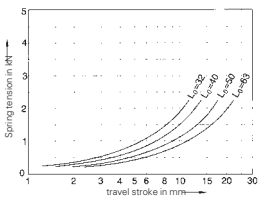
Double layer arrangement



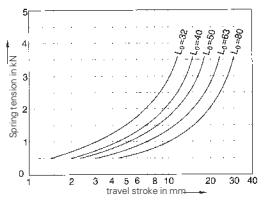
Single layer arrangement



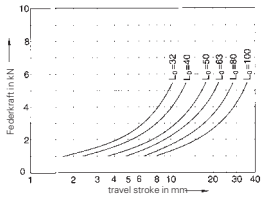
Pic. 3. Spring CR 25



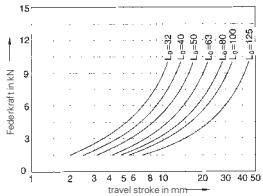
Pic. 4. Spring CR 32



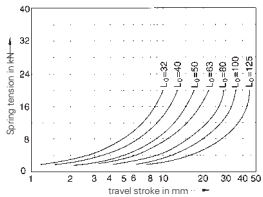
Pic. 5. Spring CR 40



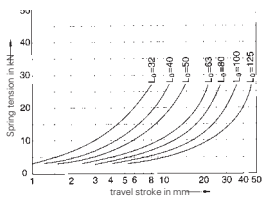
Pic. 6. Spring CR 50



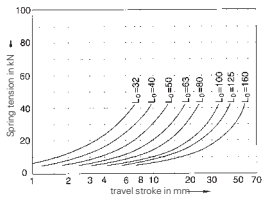
Pic. 7. Spring CR 63



Pic. 8. Spring CR 80

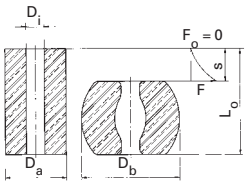


Pic. 9. Spring CR 100



Pic. 10. Spring CR 125

Elastomer springs SZ 8590



Order example: Polyurethane spring
SZ 8590
D_a = 50 mm, L_0 = 63 mm
Add **050 x 063**
Order number **SZ 8590.050 x 063**

DIN ISO 10069

Polyurethane spring

Material: Vulkollan
polyurethane-elastomer (PUR)
on base Desmodur 15
hardness 90 ± 5 Shore A

Admissible travel stroke smax = 0,25 L_0
Settling inclination 8 – 10 % von L_0
Polyurethane springs are qualified for strong spring powers.
Heat resistance up to + 80 °C
short-time up to +120 °C.

Add size to order number

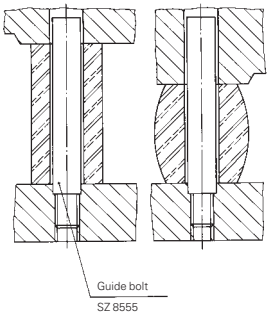
Order no. **SZ 8590.** ☐ x ☐

D_a	D_i	L_0	D_b	D_1	Pieces/standard packing	
16	6,5	12	20	28	10	**016 x 012**
		16			10	**016 x 016**
		20			10	**016 x 020**
		25			10	**016 x 025**
20	8,5	16	25	32	10	**020 x 016**
		20			10	**020 x 020**
		25			10	**020 x 025**
		32			10	**020 x 032**
25	10,5	20	31	36	5	**025 x 020**
		25			5	**025 x 025**
		32			5	**025 x 032**
		40			5	**025 x 040**
32	13,5	32	40	45	5	**032 x 032**
		40			5	**032 x 040**
		50			5	**032 x 050**
		63			5	**032 x 063**
40	13,5	32	50	56	3	**040 x 032**
		40			3	**040 x 040**
		50			3	**040 x 050**
		63			3	**040 x 063**
		80			3	**040 x 080**
50	17	32	63	71	3	**050 x 032**
		40			3	**050 x 040**
		50			3	**050 x 050**
		63			2	**050 x 063**
		80			2	**050 x 080**
		100			2	**050 x 100**
63	17	32	79	90	2	**063 x 032**
		40			2	**063 x 040**
		50			2	**063 x 050**
		63			2	**063 x 063**
		80			1	**063 x 080**
		100			1	**063 x 100**
		125			1	**063 x 125**
80	21	32	100	112	1	**080 x 032**
		40			1	**080 x 040**
		50			1	**080 x 050**
		63			1	**080 x 063**
		80			1	**080 x 080**
		100			1	**080 x 100**
		125			1	**080 x 125**
100	21	32	125	140	1	**100 x 032**
		40			1	**100 x 040**
		50			1	**100 x 050**
		63			1	**100 x 063**
		80			1	**100 x 080**
		100			1	**100 x 100**
		125			1	**100 x 125**
125	27	32	156	180	1	**125 x 032**
		40			1	**125 x 040**
		50			1	**125 x 050**
		63			1	**125 x 063**
		80			1	**125 x 080**
		100			1	**125 x 100**
		125			1	**125 x 125**
		160			1	**125 x 160**

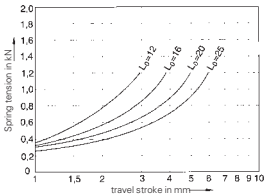
Elastomer springs

Mounting examples

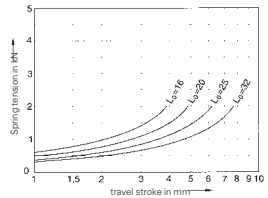
Force – stroke diagrams for rubber springs SZ 8590



Single layer arrangement

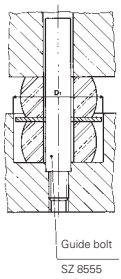


Pic. 1. Spring PUR 16

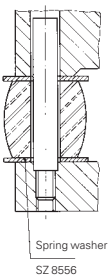


Pic. 2. Spring PUR 20

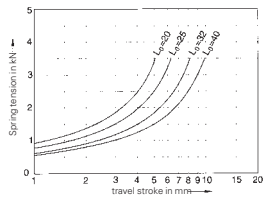
Mounting examples



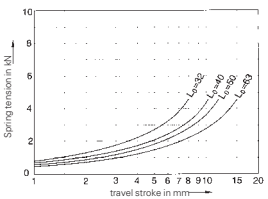
Double layer arrangement



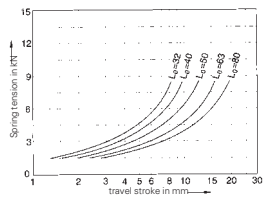
Single layer arrangement



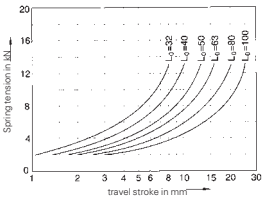
Pic. 3. Spring PUR 25



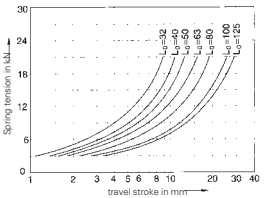
Pic. 4. Spring PUR 32



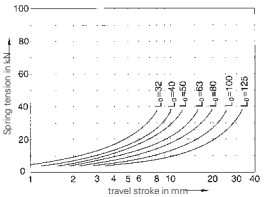
Pic. 5. Spring PUR 40



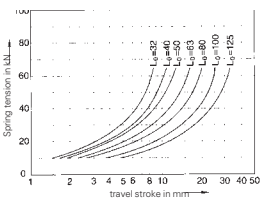
Pic. 6. Spring PUR 50



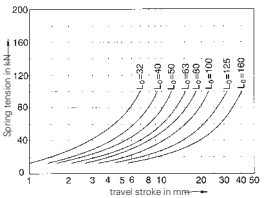
Pic. 7. Spring PUR 63



Pic. 8. Spring PUR 80



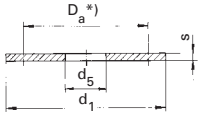
Pic. 9. Spring PUR 100

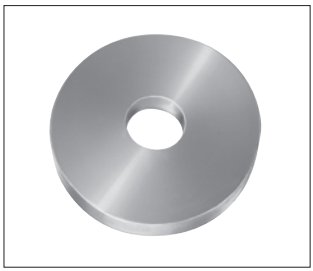


Pic. 10. Spring PUR 125

Spring washers SZ 8556

for rubber springs and polyurethane springs





DIN ISO 10069

Material: brass

Order example: Flat spring washer **SZ 8556** for rubber and plastic springs
D_a = 20 mm
Add **020**
Order number **SZ 8556.020**

Add size to order number

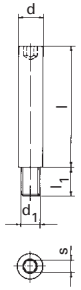
Order no. **SZ 8556.**

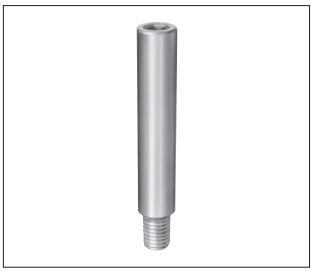
D_a*)	d_1	d_5	s	
16	20	6,5	4	**016**
20	25	8,5	4	**020**
25	30	10,5	5	**025**
32	40	13,5	5	**032**
40	50	13,5	5	**040**
50	60	16,5	6	**050**
63	80	16,5	6	**063**
80	100	20,5	8	**080**
100	120	20,5	8	**100**
125	150	26,0	8	**125**

*) D_a = spring diameter

Guide bolts SZ 8555

for rubber and polyurethane springs

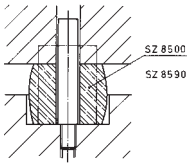




DIN ISO 10069

Material: Ruggedness grade 8.8

Order example: Guide bolt for rubber springs and polyurethane springs
SZ 8555
d = 10 mm, l = 32 mm
Add **10 x 032**
Order number **SZ 8555.10 x 032**



Mounting example

Add size to order number

Order no. **SZ 8555.** □ x □

d_{h11}	d_1	l	l_1	s	Pieces/ standard pack.	
6	M4	20	6	3	10	**06 x 020**
		25			10	**06 x 025**
		32			10	**06 x 032**
8	M6	20	9	4	10	**08 x 020**
		25			10	**08 x 025**
		32			10	**08 x 032**
		40			10	**08 x 040**
		50			10	**08 x 050**
10	M8	20	15	5	10	**10 x 020**
		25			10	**10 x 025**
		32			5	**10 x 032**
		40			5	**10 x 040**
		50			5	**10 x 050**
		63			5	**10 x 063**
13	M10	32	15	6	5	**13 x 032**
		40			5	**13 x 040**
		50			5	**13 x 050**
		63			5	**13 x 063**
		80			5	**13 x 080**
		95			5	**13 x 095**

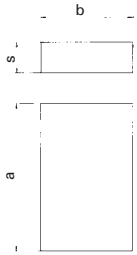
Add size to order number

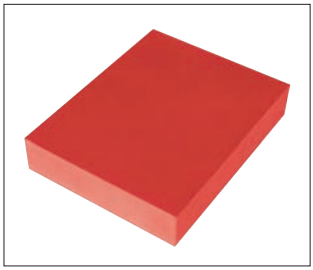
Order no. **SZ 8555.** □ x □

d_{h11}	d_1	l	l_1	s	Pieces/ standard pack.	
16	M12	32	18	8	5	**16 x 032**
		40			5	**16 x 040**
		50			5	**16 x 050**
		63			5	**16 x 063**
		80			2	**16 x 080**
		95			2	**16 x 095**
		118			2	**16 x 118**
		140			2	**16 x 140**
20	M16	50	25	10	2	**20 x 050**
		63			2	**20 x 063**
		80			2	**20 x 080**
		95			2	**20 x 095**
		118			2	**20 x 118**
		140			2	**20 x 140**
25	M20	50	30	14	2	**25 x 050**
		63			2	**25 x 063**
		80			2	**25 x 080**
		95			2	**25 x 095**
		118			2	**25 x 118**
		140			2	**25 x 140**
		180			2	**25 x 180**

Polyurethane plates SZ 5190

STEINEL® NORMALIEN





Material: Vulkollan
polyurethane-elastomer (PUR)
on base Desmodur 15
hardness 90 ± 5 Shore A

Order example: Polyurethane plate **SZ 5190**
a x b = 150 x 100 mm, s = 50mm
Add **150 x 100 x 50**
Order number **SZ 5190 .150 x 100 x 50**

Add size to order number

Order no. **SZ 5190.**			□ x □ x □
a	**b**	**s**	
75	75	25	**075 x 075 x 25**
		50	**075 x 075 x 50**
		75	**075 x 075 x 75**
100	75	12,5	**100 x 075 x 12,5**
		25	**100 x 075 x 25**
		50	**100 x 075 x 50**
		75	**100 x 075 x 75**
150	75	12,5	**150 x 075 x 12,5**
		25	**150 x 075 x 25**
		50	**150 x 075 x 50**
		75	**150 x 075 x 75**
100	100	12,5	**100 x 100 x 12,5**
		25	**100 x 100 x 25**
		50	**100 x 100 x 50**
		75	**100 x 100 x 75**
125	100	12,5	**125 x 100 x 12,5**
		25	**125 x 100 x 25**
		50	**125 x 100 x 50**
		75	**125 x 100 x 75**
150	100	12,5	**150 x 100 x 12,5**
		25	**150 x 100 x 25**
		50	**150 x 100 x 50**
		75	**150 x 100 x 75**
200	100	12,5	**200 x 100 x 12,5**
		25	**200 x 100 x 25**
		50	**200 x 100 x 50**
		75	**200 x 100 x 75**
125	125	12,5	**125 x 125 x 12,5**
		25	**125 x 125 x 25**
		50	**125 x 125 x 50**
		75	**125 x 125 x 75**
150	125	12,5	**150 x 125 x 12,5**
		25	**150 x 125 x 25**
		50	**150 x 125 x 50**
		75	**150 x 125 x 75**

Add size to order number

Order no. **SZ 5190.**			□ x □ x □
a	**b**	**s**	
200	125	12,5	**200 x 125 x**
		25	**200 x 125 x 25**
		50	**200 x 125 x 50**
		75	**200 x 125 x 75**
250	125	12,5	**250 x 125 x**
		25	**250 x 125 x 25**
		50	**250 x 125 x 50**
		75	**250 x 125 x 75**
150	150	12,5	**150 x 150 x**
		25	**150 x 150 x 25**
		50	**150 x 150 x 50**
		75	**150 x 150 x 75**
200	150	12,5	**200 x 150 x**
		25	**200 x 150 x 25**
		50	**200 x 150 x 50**
		75	**200 x 150 x 75**
250	150	12,5	**250 x 150 x**
		25	**250 x 150 x 25**
		50	**250 x 150 x 50**
		75	**250 x 150 x 75**
300	150	12,5	**300 x 150 x**
		25	**300 x 150 x 25**
		50	**300 x 150 x 50**
		75	**300 x 150 x 75**
200	200	12,5	**200 x 200 x**
		25	**200 x 200 x 25**
		50	**200 x 200 x 50**
		75	**200 x 200 x 75**
250	200	12,5	**250 x 200 x**
		25	**250 x 200 x 25**
		50	**250 x 200 x 50**
		75	**250 x 200 x 75**
300	200	12,5	**300 x 200 x**
		25	**300 x 200 x 25**
		50	**300 x 200 x 50**
		75	**300 x 200 x 75**

Add size to order number

Order no. **SZ 5190.**			□ x □ x □
a	**b**	**s**	
400	200	12,5	**400 x 200 x 12,5**
		25	**400 x 200 x 25**
		50	**400 x 200 x 50**
		75	**400 x 200 x 75**
250	250	12,5	**250 x 250 x 12,5**
		25	**250 x 250 x 25**
		50	**250 x 250 x 50**
		75	**250 x 250 x 75**
300	250	12,5	**300 x 250 x 12,5**
		25	**300 x 250 x 25**
		50	**300 x 250 x 50**
		75	**300 x 250 x 75**
400	250	12,5	**400 x 250 x 12,5**
		25	**400 x 250 x 25**
		50	**400 x 250 x 50**
		75	**400 x 250 x 75**
500	250	12,5	**500 x 250 x 12,5**
		25	**500 x 250 x 25**
		50	**500 x 250 x 50**
		75	**500 x 250 x 75**
300	300	12,5	**300 x 300 x 12,5**
		25	**300 x 300 x 25**
		50	**300 x 300 x 50**
		75	**300 x 300 x 75**
400	300	12,5	**400 x 300 x 12,5**
		25	**400 x 300 x 25**
		50	**400 x 300 x 50**
		75	**400 x 300 x 75**
500	300	12,5	**500 x 300 x 12,5**
		25	**500 x 300 x 25**
		50	**500 x 300 x 50**
		75	**500 x 300 x 75**
600	300	12,5	**600 x 300 x 12,5**
		25	**600 x 300 x 25**
		50	**600 x 300 x 50**
		75	**600 x 300 x 75**

Polyurethane rods SZ 5381, SZ 5391

Hollow plastic tubes

Material: Vulkollan
polyurethane-elastomer (PUR)
on Desmodur 15 base

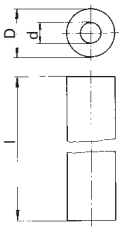
Raw material for special length springs, dampening washers, assembly parts and prototypes.

Available in strengths of
80 ± 5 Shore A and
90 ± 5 Shore A

Application tip
Resistant to: oil (lubricant oil), grease, alcohol, benzene, ozone.

Partially resistant to: water lye, acids.
Please verify duration, temperature and/or concentration before use.

Order example: Hollow plastic tube
strength 80, shore A, **SZ 5381**
D = 50 mm, l = 400 mm
Add **050 x 400**
Order number **SZ 5381.050 x 400**

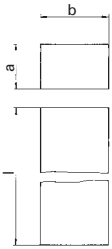


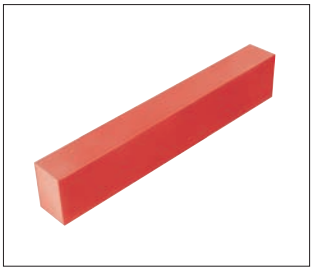
SZ 5381
Permissible spring compression s_{max} = 35%
spring sag 5 – 7 %
temperature range -20 °C bis + 80 °C
temporarily - 40 °C bis +120 °C..

SZ 5391
Permissible spring compression s_{max} = 30%
spring sag 6 – 8 %
temperature range -20 °C bis + 80 °C
temporarily -40 °C bis +120 °C.

			hardness 80 ± 5 Shore A	Add size order number	hardness 90 ± 5 Shore A	Add size order number
			Order no. **SZ 5381.**	☐ x ☐	Order no. **SZ 5391.**	☐ x ☐
D	**d**	**l**				
16	6,5	300	**016 x 300**		**016 x 300**	
20	8,5	300	**020 x 300**		**020 x 300**	
25	10,5	300	**025 x 300**		**025 x 300**	
32	13,5	300	**032 x 300**		**032 x 300**	
40	13,5	300	**040 x 300**		**040 x 300**	
50	17,0	400	**050 x 400**		**050 x 400**	
63	17,0	400	**063 x 400**		**063 x 400**	
80	21,0	400	**080 x 400**		**080 x 400**	
100	21,0	300	**100 x 300**		**100 x 300**	
125	27,0	300	**125 x 300**		**125 x 300**	

Polyurethane rods SZ 5290, SZ 5390





Polyurethane rods rectangular

Material: Vulkollan
polyurethane-elastomer (PUR)
on base Desmodur 15
hardness 90 ± 5 Shore A

Order example: Polyurethane rod rectangular
SZ 5290
a x b = 50 x 75 mm, l = 100 mm
Add **50 x 75 x 100**
Order number **SZ 5290.50 x 75 x 100**

Add size to order number

Order no. **SZ 5290.** ☐ x ☐ x ☐

a x b	l	
25 x 25	300	**25 x 25 x 300**
	600	**25 x 25 x 600**
	1200	**25 x 25 x 1200**
25 x 37,5	200	**25 x 37,5 x 200**
	300	**25 x 37,5 x 300**
	600	**25 x 37,5 x 600**
	1200	**25 x 37,5 x 1200**

Add size to order number

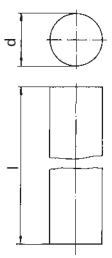
Order no. **SZ 5290.** ☐ x ☐ x ☐

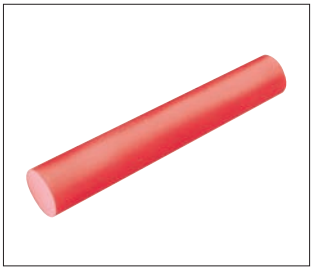
a x b	l	
50 x 50	100	**50 x 50 x 100**
	200	**50 x 50 x 200**
	300	**50 x 50 x 300**
	600	**50 x 50 x 600**
	1200	**50 x 50 x 1200**
50 x 75	100	**50 x 75 x 100**
	200	**50 x 75 x 200**
	300	**50 x 75 x 300**
	600	**50 x 75 x 600**
	1200	**50 x 75 x 1200**

Add size to order number

Order no. **SZ 5290.** ☐ x ☐ x ☐

a x b	l	
75 x 75	100	**75 x 75 x 100**
	200	**75 x 75 x 200**
	300	**75 x 75 x 300**
	600	**75 x 75 x 600**
75 x 100	100	**75 x 100 x 100**
	200	**75 x 100 x 200**
	300	**75 x 100 x 300**
	600	**75 x 100 x 600**





Polyurethane rods round

Material: Vulkollan
polyurethane-elastomer (PUR)
on base Desmodur 15
hardness 90 ± 5 Shore A

Order example: Polyurethane rod round
SZ 5390
d = 50 mm, l = 100 mm
Add **50 x 100**
Order number **SZ 5390.50 x 100**

Add size to order number

Order no. **SZ 5390.** ☐ x ☐

d	l	
25	200	**25 x 200**
	300	**25 x 300**
32	100	**32 x 100**
	200	**32 x 200**
	300	**32 x 300**

Add size to order number

Order no. **SZ 5390.** ☐ x ☐

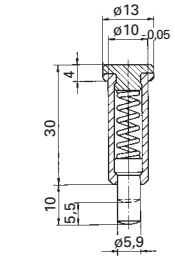
d	l	
50	63	**50 x 063**
	80	**50 x 080**
	100	**50 x 100**
	160	**50 x 160**
	200	**50 x 200**
	300	**50 x 300**

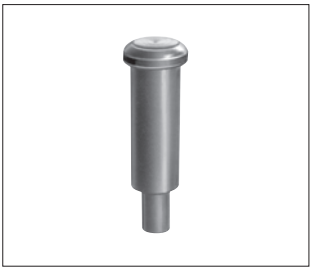
Add size to order number

Order no. **SZ 5390.** ☐ x ☐

d	l	
75	80	**75 x 080**
	100	**75 x 100**
	160	**75 x 160**
	200	**75 x 200**
	300	**75 x 300**

Thrust pieces SZ 8135, SZ 8460





Cushioned thrust pieces

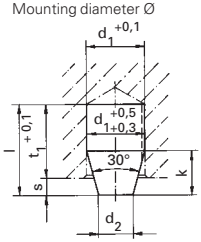
Material: Free cutting steel
ball hardened

Thrust
start ~ 45 N
finish ~ 100 N

Mounting in mounting bore holes 10 H7

Order example: Cushioned thrust piece
SZ 8135
mounting diameter 10 mm
Add **10**
Order number **SZ 8135.10**

Mounting diameter Ø



Polyurethane thrust piece

Material: Vulkollan
polyurethane-elastomer (PUR)
on base Desmodur 15
hardness 90 ± 5 Shore A
mounting in mounting bore holes d_1 ± 0,1

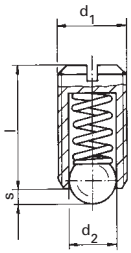
Order example: Polyurethane thrust piece
SZ 8460
d_1 = 16 mm
Add **16**
Order number **SZ 8460.16**

Add
size to
order number

Order no. **SZ 8460.**

d_1 +0,5 +0,3	d_2	l	k	t_1 +0,1	Compressive force (N)	at s	Pieces/standard packing	
6	3,6	9,5	4,5	8	150	1,5	20	**06**
10	6	15,5	7,5	13	350	2,5	20	**10**
16	9,5	25	12	21	1500	4	10	**16**

Thrust pieces SZ 8130, SZ 8131



Cushioned thrust pieces

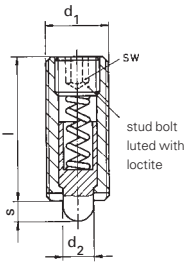
Material: Free cutting steel
ball hardened

Order example: Cushioned thrust piece
SZ 8130
d_1 = M 10
Add **10**
Order number **SZ 8130.10**

Add
size to
order number

Order no. **SZ 8130.**

d_1	d_2	l	s	Thrust (N) start ~	Thrust (N) finish ~	Pieces/standard packing	
M3	1,5	7	0,5	2,2	3	50	**03**
M4	2,5	9	0,8	6	12	50	**04**
M5	3	12	0,9	7	13	50	**05**
M6	3,5	14	1	9	15	50	**06**
M8	5	16	1,5	20	35	50	**08**
M10	6	19	2	25	45	50	**10**
M12	8	22	2,5	35	60	25	**12**
M16	10	24	3,5	65	110	25	**16**



Cushioned thrust pieces

Material: Free cutting steel
thrust bolt hardened

Order example: Cushioned thrust piece
SZ 8131
d_1 = M 8
Add **08**
Order number **SZ 8131.08**

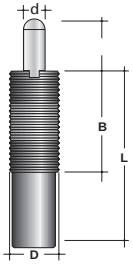
Add
size to
order number

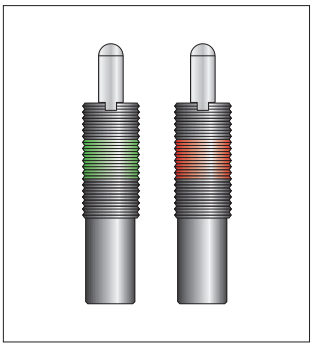
Order no. **SZ 8131.**

d_1	d_2	l	s	SW	Thrust (N) start ~	Thrust (N) finish ~	Pieces/standard packing	
M3	1	12	1	0,7	1,7	3,5	25	**03**
M4	1,5	15	1,5	1,3	5	15	25	**04**
M5	2,4	18	2,3	1,5	7	20	25	**05**
M6	2,7	20	2,5	2	7	20	25	**06**
M8	3,5	22	3	2,5	9	35	10	**08**
M10	4	22	3	3	9	35	10	**10**
M12	6	28	4	4	15	55	10	**12**
M16	7,5	32	5	5	45	100	10	**16**

Spring-mounted devices SZ 8140, SZ 8145

mechanic





Application:
Pressure devices are mainly used in production of tool, equipment and machines as pressure pins, for holding parts down or ejecting parts, or for absorbing vibration.

Installation note:
Screwing the spring-mounted pressure devices in and out should only be done with the correct size special key SZ 8160. The coloured thread marking also serves to ensure threading.

Add size to order number

Spring-mounted pressure device, light series
Colour coding: green

Order no. **SZ 8140.**

D	stroke	L	B	d	Initial pressure	Final pressure	
mm	mm	mm	mm	mm	daN	daN	
M 12	10	43	35	5,5	0,4	2	**12 x 010**
M 16	10	60	35	7,5	1,3	4	**16 x 010**
	15	60			1,0		**16 x 015**
	20	80			1,3		**16 x 020**
	30	125			1,8		**16 x 030**
	40	150			1,3		**16 x 040**
	50	150			1,3		**16 x 050**
M 24	15	60	45	10	2,0	10	**24 x 015**

Order example: Spring-mounted pressure device, light series **SZ 8140**
D = M12, Stroke 10 mm
Add **12 x 010**
Order number **SZ 8140.12 x 010**

Add size to order number

Spring-mounted pressure device, heavy series
Colour coding: red

Order no. **SZ 8145.** □ x □

D	stroke	L	B	d	Initial pressure	Final pressure	
mm	mm	mm	mm	mm	daN	daN	
M 12	10	43	35	5,5	0,7	4	**12 x 010**
M 16	10	60	35	7,5	2,7	8	**16 x 010**
	15	60			1,5		**16 x 015**
	20	80			1,7		**16 x 020**
	30	125			2,0		**16 x 030**
	40	150			2,6		**16 x 040**
	50	150			2,6		**16 x 050**
M 24	15	60	45	10	4,0	20	**24 x 015**

Order example: Spring-mounted pressure device, heavy series **SZ 8145**
D = M16, Stroke 30 mm
Add **12 x 030**
Order number **SZ 8145.16 x 030**

Gas springs

- Highest durability: over 3 million strokes possible!
- Innovative sealing materials
- FEM calculator and housing design secure against overload
- Maximum operating security via an internal piston stop
- Lifetime lubrication
- Cross-positioned piston rods in the housing to handle shearing forces
- Simple and safe replacement of the sealing package
- Available immediately

Gas springs – an overview

STEINEL NORMALIEN

SZ 8080.1.

Ø mm	daN	daN	Stroke in mm 5	10	13	15	25	38	50	63	75	80	100	125	160	200
19	100	160		•		•	•	○	•			•				
25	200	320		•		•	•	○	•			•				
32	350	560		•		•	•	○	•			•				
38	500	800		•		•	•	○	•			•				
50	1000	1600		○			•	○	•	○		•	•	•	•	•
63	1500	2400		○			•	○	•	○		•	•	•	•	•
75	2500	4000		○			•	○	•	○		•	•	•	•	•
95	4000	6400					•	○	•	○		•	•	•	•	•
120	6500	10400					•	○	•	○		•	•	•	•	•

SZ 7080.1.

Ø mm	daN	daN	Stroke in mm 5	10	13	15	25	38	50	63	75	80	100	125	160	200
19	150	240		•		•	•	○	•			•				
25	300	480		•		•	•	○	•			•				
32	500	800		•		•	•	○	•			•				
38	750	1200		•		•	•	○	•			•				
50	1500	2400		○			•	○	•	○		•	•	•	•	•
63	2000	3200		○			•	○	•	○		•	•	•	•	•
75	3000	4800		○			•	○	•	○		•	•	•	•	•
95	5000	8000					•	○	•	○		•	•	•	•	•

SZ 8066.1.

Ø mm	daN	daN	Stroke in mm 5	10	13	15	25	38	50	63	75	80	100	125	160	200
19	100	160		•		•	•	•	•			•				
25	200	320		•		•	•	•	•			•				
32	350	560		•		•	•	•	•			•				
38	500	800		•		•	•	•	•			•				
50	1000	1600		•			•	•	•	•		•	•	•	•	•
63	1500	2400		•			•	•	•	•		•	•	•	•	•
75	2500	4000		•			•	•	•	•		•	•	•	•	•
95	4000	6400					•	•	•	•		•	•	•	•	•
120	6500	10400					•	•	•	•		•	•	•	•	•

SZ 7066.1.

Ø mm	daN	daN	Stroke in mm 5	10	13	15	25	38	50	63	75	80	100	125	160	200
19	150	240		•		•	•	•	•			•				
25	300	480		•		•	•	•	•			•				
32	500	800		•		•	•	•	•			•				
38	750	1200		•		•	•	•	•			•				
50	1500	2400		•			•	•	•	•		•	•	•	•	•
63	2000	3200		•			•	•	•	•		•	•	•	•	•
75	3000	4800		•			•	•	•	•		•	•	•	•	•
95	5000	8000					•	•	•	•		•	•	•	•	•

○ Price and delivery times on request

Gas springs – an overview

STEINEL NORMALIEN

SZ 8065.1.

ø mm	daN	daN	Stroke in mm 5	10	13	15	25	38	50	63	75	80	100	125	160	200
19	150	240		•		•	•	•	•	•		•				
25	300	480		•		•	•	•	•	•		•				
32	500	800		•		•	•	•	•	•		•				
38	1000	1600		•		•	•	•	•	•		•				
50	2000	3200		•		•	•	•	•	•		•				
63	3000	4800		•		•	•	•	•	•		•				
75	5000	8000		•		•	•	•	•	•		•				
95	8000	12800		•		•	•	•	•	•		•				

SZ 8060.1.

ø mm	daN	daN	Stroke in mm 5	10	13	15	25	38	50	63	75	80	100	125	160	200
25	400	730		•		•	•		•							
32	700	1230		•		•	•		•							
38	1000	1710		•		•	•		•							
50	2000	3400		•		•	•		•							
63	3000	4800		•		•	•		•							
75	4000	6400		•		•	•		•							
95	7000	11200		•		•	•		•							
120	10000	16000		•		•	•		•							

SZ 8150.1.

M	ø mm	daN	daN	Stroke in mm 10	20	30	40	50	60	70	80	100	125	160	200
M 24 x 1,5	22	170	270	•	•	•	•	•	•	•	•	•			
M 16 x 1,5	14	40	65	•	•	•	•	•	•	•	•	•			

Excerpt from the operating instructions for STEINEL gas springs

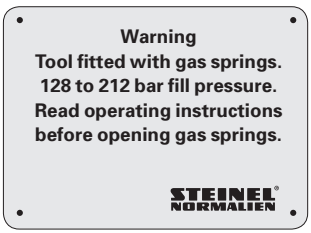
1. Safety
In spite of every precaution taken during the design and production of our gas springs, it is impossible to completely eliminate potential dangers arising from handling them incorrectly during installation, commissioning and daily use. The following safety instructions serve to identify and avoid sources of potential risk to ensure that the use of the gas springs is as safe as possible. These safety instructions must be followed at all times if the gas springs are to be used without significant risk.

1.1 Safety precautions
The gas springs may only be operated and worked on by qualified, authorised personnel. Qualified personnel are people who, on account of their training and experience and the instruction they have received, as well as their knowledge of the relevant standards, are in a position to assess the work assigned to them and recognise any potential dangers. Anyone involved in the installation, operation, maintenance and serving of the gas springs must be familiarised with the relevant sections of the operating instructions. It is especially important that the section entitled 'Safety' has been read and understood.

1.2 Precautions before initial use
Before use, and after any planned or fault-related period of non-use, check that the gas springs are ready for operation.

- The fill pressure must lie within the permitted range. The maximum fill pressure for each spring, which is dependent on the operating temperature, can be seen on the outside casing of the cylinder. The gas springs should only ever be filled using the specially designed filling system.
- The mounting screws must be done up tightly (tighten to 20 Nm).
- Check the surface of the piston rod for damage.
- There should be no visible signs of damage on the gas spring.

1.3 Using the gas springs
Before use, and after any work done on the gas springs, they must be checked by an appropriately qualified person to ensure that they are safe for operation and not liable to cause an accident. The gas springs may only be operated by authorised, suitably trained and therefore appropriately knowledgeable personnel.



'Gas springs' warning sign

Order number:
SZ 8099 (105 x 75 mm)
SZ 8099.02 (50 x 35 mm)
SZ 8099.03 (150 x 110 mm)

Gas springs – information

Important advice

Important notes

Different initial fill pressures produce different initial compression forces. The gas springs described here exert 1.6 times more force at the end of their stroke than at the beginning. This increase in force along the stroke is approximately linear.

The cylinders are supplied filled and ready for use. The pressure and force figures apply to a room temperature of +20 °C. Provided the volume remains constant, every degree Celsius increase (or decrease) in temperature will increase (or decrease) the pressure by 0.36%.

Piston rod surface

The gas springs described here work using gas seals next to the piston rod surface. The piston rod surfaces are precision-machined (Ra </= 0.03 µm) and extremely hard (approx. HV 1700). We advise the utmost care when handling the cylinders in order to avoid scratches and scoring along the piston rod.

Working stroke

The working stroke specified in the tables always relates to the useful stroke, which is determined by the mechanical stop on the piston rod. We recommend leaving a stroke reserve of 10% of the total stroke for long-term use.

No

Avoid sideways forces as far as possible. The working stroke should always be perpendicular to the base surface of the cylinder. To ensure that this is the case, the gas springs must be attached to a level surface.

Avoid scratching or scoring the piston rod.

Do not attempt any mechanical work on the gas springs.

The gas springs should only be serviced and maintained by trained technicians.

Yes

Attach the gas springs to the underlying surface with very secure screws.
Never screw the cylinders on at both ends.

Only fill the gas springs with nitrogen (N2).

Lubricate the piston rod using high-performance grease (Fuchs – Renolit HLT 2).(176 °F). Höhere

The maximum operating temperature is 80 °C (176 °F). Higher temperatures reduce the performance of the gas seals and lead to greater wear.

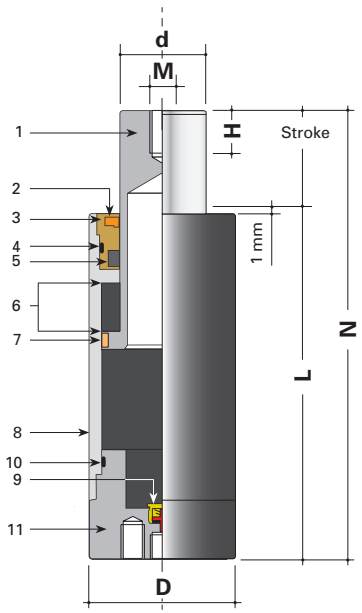
A gas spring may only be removed from its place of installation when completely decompressed.

Gas spring SZ 8080.1.

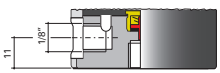
Description
Steinel gas spring **SZ 8080.1.** can be charged using commercially available nitrogen gas bottles. Nitrogen gas is a safe, inert gas.

Special features
- Each nitrogen cylinder forms a functioning, closed unit **(compact unit)**
- Strong forces in a small space
- Easy to install
- No spring breakage
- Recommended stroke reserve: 10%
- Mechanical preloading not necessary
- Easy to use
- Cylinders with diameters of 38 mm or more have a hole and cap in the side and are suitable for multiple-cylinder networking.

Order example: gas spring **SZ 8080.1.**
with a diameter of 38 mm and a stroke of 100 mm.
Extension **038 x 100**
Order number **SZ 8080.1.038 x 100**



1 Piston rod
2 Oil and dirt scraper
3 DS-holder
4 O-ring
5 Gas seal
6 Mechanical stop
7 Piston ring
8 Casing
9 High-performance valve
10 O-ring
11 Base flange



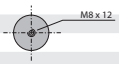
Flange from Ø 38 (90° turned view)

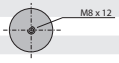
Gas spring SZ 8080.1.

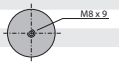
STEINEL NORMALIEN

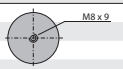
Add size to order number

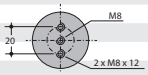
Gas spring										Order no. **SZ 8080.1.** ☐ x ☐
D	**Stroke**	**L**	**N**	**d**	**M**	**H**				
mm	**mm**	**mm**	**mm**	**mm**	**mm**	**mm**	**bar**	**daN**	**daN**	**Cylinder attachment**
19	10	70	80	10	M 5	7	128	100	160	**019 x 010**
	15	75	90							**019 x 015**
	25	85	110							**019 x 025**
	50	110	160							**019 x 050**
	80	140	220							**019 x 080**
25	10	70	80	14	M 6	8	129	200	320	**025 x 010**
	15	75	90							**025 x 015**
	25	85	110							**025 x 025**
	50	110	160							**025 x 050**
	80	140	220							**025 x 080**
32	10	60	70	18	M 8	12	137	350	560	**032 x 010**
	15	65	80							**032 x 015**
	25	75	100							**032 x 025**
	50	100	150							**032 x 050**
	80	130	210							**032 x 080**
38	10	65	75	22	M 8	12	131	500	800	**038 x 010**
	15	70	85							**038 x 015**
	25	80	105							**038 x 025**
	50	105	155							**038 x 050**
	80	135**	220							**038 x 080**
50	25	110	135	30	M 8	12	141	1000	1600	**050 x 025**
	50	135	185							**050 x 050**
	80	165	245							**050 x 080**
	100	185**	295							**050 x 100**
	125*	210**	345							**050 x 125**
	160*	255	415							**050 x 160**
	200*	295	495							**050 x 200**
63	25	110	135	36	M 8	12	147	1500	2400	**063 x 025**
	50	135	185							**063 x 050**
	80	165	245							**063 x 080**
	100	180**	285							**063 x 100**
	125*	220	345							**063 x 125**
	160*	255	415							**063 x 160**
	200*	295	495							**063 x 200**
75	25	100**	145	45	M 8	12	157	2500	4000	**075 x 025**
	50	125**	195							**075 x 050**
	80	155**	255							**075 x 080**
	100	175**	300							**075 x 100**
	125*	220**	350							**075 x 125**
	160*	265	425							**075 x 160**
	200*	310	510							**075 x 200**
95	25	110**	155	58	M 8	12	151	4000	6400	**095 x 025**
	50	135**	205							**095 x 050**
	80	175**	270							**095 x 080**
	100	205**	310							**095 x 100**
	125*	240**	370							**095 x 125**
	160*	280	440							**095 x 160**
	200*	330	530							**095 x 200**
120	25	120**	165	75	M 8	12	147	6500	10400	**120 x 025**
	50	145**	215							**120 x 050**
	80	180**	275							**120 x 080**
	100	210**	315							**120 x 100**
	125*	245**	375							**120 x 125**
	160*	290	450							**120 x 160**
	200*	340	540							**120 x 200**

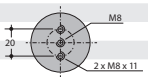


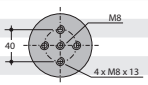


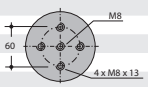


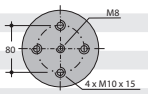












* Cylinders with strokes from 125 to 200 mm, delivery time on request

** new, shorter installation height; suitable washer will be sent for repair or replacement deliveries

Stroke 38 and 63 on request

Gas spring SZ 7080.1.

extra strong

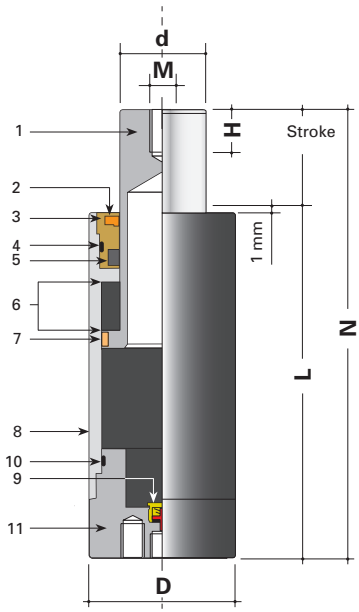
Description

Steinel gas spring **SZ 7080.1.** can be charged using commercially available nitrogen gas bottles. Nitrogen gas is a safe, inert gas.

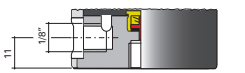
Special features

- Each nitrogen cylinder forms a functioning, closed unit **(compact unit)**
- Strong forces in a small space
- Easy to install
- No spring breakage
- Recommended stroke reserve: 10%
- Mechanical preloading not necessary
- Easy to use
- Cylinders with diameters of 38 mm or more have a hole and cap in the side and are suitable for multiple-cylinder networking.

Order example: gas spring **SZ 7080.1.**
with a diameter of 38 mm and a stroke of 100 mm.
Extension **038 x 100**
Order number **SZ 7080.1.038 x 100**



1 Piston rod
2 Oil and dirt scraper
3 DS-holder
4 O-ring
5 Gas seal
6 Mechanical stop
7 Piston ring
8 Casing
9 High-performance valve
10 O-ring
11 Base flange



Flange from Ø 38 (90° turned view)

Gas spring SZ 7080.1.

extra strong

STEINEL NORMALIEN

Add size to order number

Gas spring Order no. **SZ 7080.1.** x

D	Hub	L	N	d	M	H					
mm	mm	mm	mm	mm	mm	mm	bar	daN	daN	Cylinder attachment	
19	10	70	80	10	M 5	7	191	150	240		**019 x 010**
	15	75	90							M8 x 12	**019 x 015**
	25	85	110								**019 x 025**
	50	110	160								**019 x 050**
	80	140	220								**019 x 080**
25	10	70	80	14	M 6	8	195	300	480		**025 x 010**
	15	75	90							M8 x 12	**025 x 015**
	25	85	110								**025 x 025**
	50	110	160								**025 x 050**
	80	140	220								**025 x 080**
32	10	60	70	18	M 8	12	196	500	800		**032 x 010**
	15	65	80							M8 x 9	**032 x 015**
	25	75	100								**032 x 025**
	50	100	150								**032 x 050**
	80	130	210								**032 x 080**
38	10	65	75	22	M 8	12	197	750	1200		**038 x 010**
	15	70	85							M8 x 9	**038 x 015**
	25	80	105								**038 x 025**
	50	105	155								**038 x 050**
	80	135**	220								**038 x 080**
50	25	110	135	30	M 8	12	212	1500	2400		**050 x 025**
	50	135	185							M8	**050 x 050**
	80	165	245							20	**050 x 080**
	100	185**	295							2 x M8 x 12	**050 x 100**
	125*	210**	345								**050 x 125**
	160*	255	415								**050 x 160**
	200*	295	495								**050 x 200**
63	25	110	135	36	M 8	12	196	2000	3200		**063 x 025**
	50	135	185								**063 x 050**
	80	165	245							M8	**063 x 080**
	100	180**	285							20	**063 x 100**
	125*	220	345							2 x M8 x 11	**063 x 125**
	160*	255	415								**063 x 160**
	200*	295	495								**063 x 200**
75	25	100**	145	45	M 8	12	189	3000	4800		**075 x 025**
	50	125**	195							M8	**075 x 050**
	80	155**	255							40	**075 x 080**
	100	175**	300								**075 x 100**
	125*	220**	350							4 x M8 x 13	**075 x 125**
	160*	265	425								**075 x 160**
	200*	310	510								**075 x 200**
95	25	110**	155	58	M 8	12	189	5000	8000		**095 x 025**
	50	135**	205							M8	**095 x 050**
	80	175**	270								**095 x 080**
	100	205**	310							60	**095 x 100**
	125*	240**	370								**095 x 125**
	160*	280	440							4 x M8 x 13	**095 x 160**
	200*	330	530								**095 x 200**

* Cylinders with strokes from 125 to 200 mm, delivery time on request

** new, shorter installation height; washer included in repair or replacement deliveries

Stroke 38 and 63 on request

Gas spring SZ 8066.1.

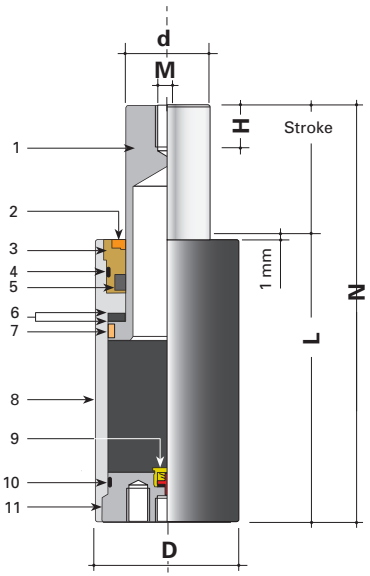
Description
Steinel gas spring **SZ 8066.1.** can be charged using commercially available nitrogen gas bottles. Nitrogen gas is a safe, inert gas.

Special features
- Each nitrogen cylinder forms a functioning, closed unit **(compact unit)**
- Strong forces in a small space
- Easy to install
- No spring breakage
- Recommended stroke reserve: 10%
- Mechanical preloading not necessary
- Easy to use

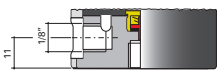
Multiple-cylinder system
Cylinders with diameters of 38 mm or more can be fitted with a side hole with cap for the multiple-cylinder system. However, this increases dimensions 'L' and 'N' by 20 mm.

Remember!
When ordering gas springs for the multiple-spring system, please add a **'V'** after the order number **(for example: SZ 8066.1.050 x 025 V)**. (Price on request)

Order example: gas spring **SZ 8066.1.** with a diameter of 38 mm
and a stroke of 25 mm
Extension **038 x 025**
Order number **SZ 8066.1.038 x 025**



1 Piston rod
2 Oil and dirt scraper
3 DS-holder
4 O-ring
5 Gas seal
6 Mechanical stop
7 Piston ring
8 Casing
9 High-performance valve
10 O-ring
11 Base flange



Flange for multiple-spring system from Ø 38

Gas spring SZ 8066.1.

STEINEL NORMALIEN

Add size to order number

Gas spring — Order no. **SZ 8066.1.** ☐ x ☐

D	Stroke	L	N	d	M	H					
mm	mm	mm	mm	mm	mm	mm	bar	daN	daN	Cylinder attachment	
19	10	50	60	10	M 5	7	128	100	160		**019 x 010**
	15	55	70								**019 x 015**
	25	65	90							M6 x 6	**019 x 025**
	38	78	116								**019 x 038**
	50	90	140								**019 x 050**
	80	120	200								**019 x 080**
25	10	50	60	14	M 6	8	129	200	320		**025 x 010**
	15	55	70								**025 x 015**
	25	65	90							M6 x 6	**025 x 025**
	38	78	116								**025 x 038**
	50	90	140								**025 x 050**
	80	120	200								**025 x 080**
32	10	55	65	18	M 8	12	137	350	560		**032 x 010**
	15	60	75								**032 x 015**
	25	70	95							M6 x 6	**032 x 025**
	38	83	121								**032 x 038**
	50	95	145								**032 x 050**
	80	125	205								**032 x 080**
38	10	55	65	22	M 8	12	131	500	800		**038 x 010**
	15	60	75								**038 x 015**
	25	70	95							M8 x 9	**038 x 025**
	38	83	121							17	**038 x 038**
	50	95	145								**038 x 050**
	80	125	205							2 x M6 x 10	**038 x 080**
50	10	60	70	30	M 8	12	141	1000	1600		**050 x 010**
	25	75	100								**050 x 025**
	38	88	126								**050 x 038**
	50	100	150							M8	**050 x 050**
	63	113	176								**050 x 063**
	80	130	210							20	**050 x 080**
	100	150	250								**050 x 100**
	125*	190	315							2 x M8 x 11	**050 x 125**
	160*	235	395								**050 x 160**
	200*	275	475								**050 x 200**
63	10	65	75	36	M 8	12	147	1500	2400		**063 x 010**
	25	80	105								**063 x 025**
	38	93	131								**063 x 038**
	50	105	155							M8	**063 x 050**
	63	118	181								**063 x 063**
	80	135	215							20	**063 x 080**
	100	160	260								**063 x 100**
	125*	190	315							2 x M8 x 11	**063 x 125**
	160*	235	395								**063 x 160**
	200*	275	475								**063 x 200**
75	10	65	75	45	M 8	12	157	2500	4000		**075 x 010**
	25	80	105								**075 x 025**
	38	93	131								**075 x 038**
	50	105	155							M8	**075 x 050**
	63	118	181								**075 x 063**
	80	135	215							40	**075 x 080**
	100	155	255								**075 x 100**
	125*	200	325							4 x M8 x 11	**075 x 125**
	160*	245**	410								**075 x 160**
	200*	290**	500								**075 x 200**
95	25	90	115	58	M 8	12	151	4000	6400		**095 x 025**
	38	103	141								**095 x 038**
	50	115	165								**095 x 050**
	63	128	191							M8	**095 x 063**
	80	155	235								**095 x 080**
	100	185	285							60	**095 x 100**
	125*	220	345								**095 x 125**
	160*	260	420							4 x M8 x 13	**095 x 160**
	200*	310	510								**095 x 200**
120	25	100	125	75	M 8	12	147	6500	10400		**120 x 025**
	38	113	151								**120 x 038**
	50	125	175							M8	**120 x 050**
	63	138	201								**120 x 063**
	80	160	240							80	**120 x 080**
	100	190	290								**120 x 100**
	125*	225	350								**120 x 125**
	160*	270	430							4 x M10 x 15	**120 x 160**
	200*	320	520								**120 x 200**

*Cylinders with strokes from 125 to 200 mm, delivery time on request

** new, shorter installation height, washer included in repair or replacement deliveries

Gas spring SZ 7066.1.

extra strong

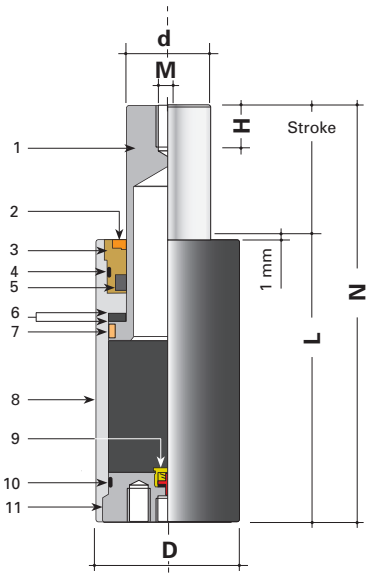
Description:
Steinel gas spring **SZ 7066.1.** can be charged using commercially available nitrogen gas bottles. Nitrogen gas is a safe, inert gas.

Special features
- Each nitrogen cylinder forms a functioning, closed unit **(compact unit)**
- Strong forces in a small space
- Easy to install
- No spring breakage
- Recommended stroke reserve: 10%
- Mechanical preloading not necessary
- Easy to use

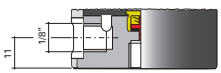
Multiple-cylinder system
Cylinders with diameters of 38 mm or more can be fitted with a side hole with cap for the multiple-cylinder system. However, this increases dimensions 'L' and 'N' by 20 mm.

Remember!
When ordering gas springs for the multiple-spring system, please add a 'V' after the order number **(for example: SZ 7066.1.050 x 025 V)**.
(Price on request)

Order example: gas spring **SZ 7066.1.**
with a diameter of 38 mm and a stroke of 25 mm
Extension **038 x 025**
Order number **SZ 7066.038 x 025**



1 Piston rod
2 Oil and dirt scraper
3 DS-holder
4 O-ring
5 Gas seal
6 Mechanical stop
7 Piston ring
8 Casing
9 High-performance valve
10 O-ring
11 Base flange



Flange for multiple-spring system from Ø 38

Gas spring SZ 7066.1.

extra strong

STEINEL NORMALIEN

Add size to order number

Gas spring — Order no. **SZ 7066.1.** ☐ x ☐

D	Stroke	L	N	d	M	H				Cylinder attachment	
mm	mm	mm	mm	mm	mm	mm	bar	daN	daN		
19	10	50	60	10	M 5	7	191	150	240	M6 x 6	019 x 010
	15	55	70								019 x 015
	25	65	90								019 x 025
	38	78	116								019 x 038
	50	90	140								019 x 050
	80	120	200								019 x 080
25	10	50	60	14	M 6	8	195	300	480	M6 x 6	025 x 010
	15	55	70								025 x 015
	25	65	90								025 x 025
	38	78	116								025 x 038
	50	90	140								025 x 050
	80	120	200								025 x 080
32	10	55	65	18	M 8	12	196	500	800	M6 x 6	032 x 010
	15	60	75								032 x 015
	25	70	95								032 x 025
	38	83	121								032 x 038
	50	95	145								032 x 050
	80	125	205								032 x 080
38	10	55	65	22	M 8	12	197	750	1200	M8 x 9	038 x 010
	15	60	75								038 x 015
	25	70	95							17	038 x 025
	38	83	121								038 x 038
	50	95	145							2 x M6 x 10	038 x 050
	80	125	205								038 x 080
50	10	60	70	30	M 8	12	212	1500	2400		050 x 010
	25	75	100								050 x 025
	38	88	126								050 x 038
	50	100	150							M8	050 x 050
	63	113	176								050 x 063
	80	130	210							20	050 x 080
	100	150	250							2 x M8 x 11	050 x 100
	125*	190	315								050 x 125
	160*	235	395								050 x 160
	200*	275	475								050 x 200
63	10	65	75	36	M 8	12	196	2000	3200		063 x 010
	25	80	105								063 x 025
	38	93	131								063 x 038
	50	105	155							M8	063 x 050
	63	118	181								063 x 063
	80	135	215							20	063 x 080
	100	160	260							2 x M8 x 11	063 x 100
	125*	190	315								063 x 125
	160*	235	395								063 x 160
	200*	275	475								063 x 200
75	10	65	75	45	M 8	12	189	3000	4800		075 x 010
	25	80	105								075 x 025
	38	93	131								075 x 038
	50	105	155							M8	075 x 050
	63	118	181								075 x 063
	80	135	215							40	075 x 080
	100	155	255								075 x 100
	125*	200	325							4 x M8 x 11	075 x 125
	160*	245**	410								075 x 160
	200*	290**	500								075 x 200
95	25	90	115	58	M 8	12	189	5000	8000		095 x 025
	38	103	141								095 x 038
	50	115	165								095 x 050
	63	128	191							M8	095 x 063
	80	155	235								095 x 080
	100	185	285							60	095 x 100
	125*	220	345								095 x 125
	160*	260	420							4 x M8 x 13	095 x 160
	200*	310	510								095 x 200

*Cylinders with strokes from 125 to 200 mm, delivery time on request

** new, shorter installation height; washer included in repair or replacement deliveries

Gas spring SZ 8065.1.

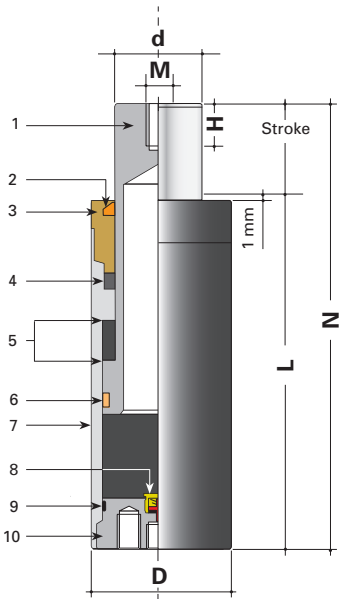
Description:
Steinel gas spring **SZ 8065.1.** can be charged using commercially available nitrogen gas bottles. Nitrogen gas is a safe, inert gas.

Special features
- Each nitrogen cylinder forms a functioning, closed unit **(compact unit)**
- This series has particularly high compression force ratings
- Easy to install
- No spring breakage
- Recommended stroke reserve: 10%
- Mechanical preloading not necessary
- Easy to use

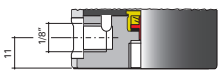
Multiple-cylinder system
Cylinders with diameters of 38 mm or more can be fitted with a side hole with cap for the multiple-cylinder system. However, this increases dimensions 'L' and 'N' by 20 mm.

Remember!
When ordering gas springs for the multiple-spring system, please add a **'V'** after the order number **(for example: SZ 8065.1.050 x 025 V)**.
(Price on request)

Order example: gas spring **SZ 8065.1.**
with a diameter of 38 mm and a stroke of 25 mm
Extension **038 x 025**
Order number **SZ 8065.1 .038 x 025**



1 Piston rod
2 Oil and dirt scraper
3 DS-holder
4 Gas seal
5 Mechanical stop
6 Piston ring
7 Casing
8 High-performance valve
9 O-ring
10 Base flange



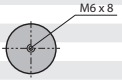
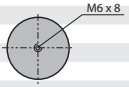
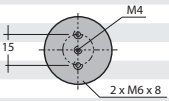
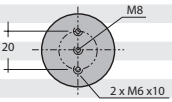
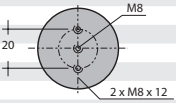
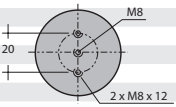
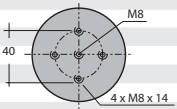
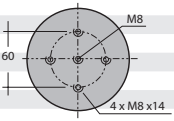
Flange for multiple-spring system from Ø 38

Gas spring SZ 8065.1.

STEINEL NORMALIEN

Add size to order number

Gas spring — Order no. **SZ 8065.1.** ☐ x ☐

D	Stroke	L	N	d	M	H				Cylinder attachment	
mm	mm	mm	mm	mm	mm	mm	bar	daN	daN		
19	10	65	75	10	M 5	7	191	150	240		**019 x 010**
	15	70	85								**019 x 015**
	25	80	105								**019 x 025**
	38	97	135								**019 x 038**
	50	110	160								**019 x 050**
	63	127	190								**019 x 063**
	80	140	220								**019 x 080**
25	10	65	75	14	M 6	8	196	300	480		**025 x 010**
	15	70	85								**025 x 015**
	25	80	105								**025 x 025**
	38	97	135								**025 x 038**
	50	110	160								**025 x 050**
	63	127	190								**025 x 063**
	80	145	225								**025 x 080**
32	10	65	75	18	M 8	12	197	500	800		**032 x 010**
	15	70	85								**032 x 015**
	25	80	105								**032 x 025**
	38	97	135								**032 x 038**
	50	110	160								**032 x 050**
	63	132	195								**032 x 063**
	80	150	230								**032 x 080**
38	10	65	75	25	M 8	12	205	1000	1600		**038 x 010**
	15	70	85								**038 x 015**
	25	80	105								**038 x 025**
	38	97	135								**038 x 038**
	50	110	160								**038 x 050**
	63	142	205								**038 x 063**
	80	160	240								**038 x 080**
50	10	95	105	35	M 8	12	209	2000	3200		**050 x 010**
	15	100	115								**050 x 015**
	25	110	135								**050 x 025**
	38	127	165								**050 x 038**
	50	140	190								**050 x 050**
	63	157	220								**050 x 063**
	80	175	255								**050 x 080**
63	10	95	105	45	M 8	12	189	3000	4800		**063 x 010**
	15	100	115								**063 x 015**
	25	110	135								**063 x 025**
	38	127	165								**063 x 038**
	50	140	190								**063 x 050**
	63	157	220								**063 x 063**
	80	175	255								**063 x 080**
75	10	105	115	56	M 8	12	203	5000	8000		**075 x 010**
	15	110	125								**075 x 015**
	25	120	145								**075 x 025**
	38	137	175								**075 x 038**
	50	150	200								**075 x 050**
	63	177	240								**075 x 063**
	80	195	275								**075 x 080**
95	10	115	125	75	M 8	12	182	8000	12800		**095 x 010**
	15	120	135								**095 x 015**
	25	130	155								**095 x 025**
	38	147	185								**095 x 038**
	50	165	215								**095 x 050**
	63	192	255								**095 x 063**
	80	210	290								**095 x 080**

Gas Spring SZ 8060.1

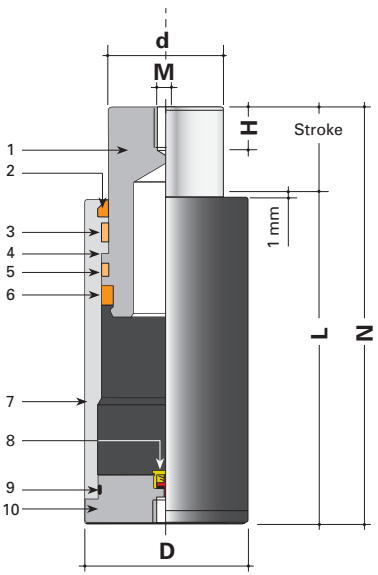
General information:
Steinel **SZ 8060.1** nitrogen gas springs can be filled using commercially-available nitrogen gas cylinders. Nitrogen is a neutral, non-hazardous gas.

Special characteristics
- Each nitrogen gas spring is a separate, functional unit **(compact assembly)**
- High power in the smallest space
- Easy installation
- No spring failure
- Recommended stroke reserve 10%
- Mechanical pretensioning not required
- Easy to operate
- This top series also provides high compressive forces along with low installation heights

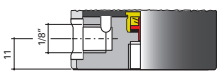
Connecting system
Cylinders diameter D= 38 mm and higher can be equipped with a side sealing plug for the connecting system. However, this will increase the "L" and "N" dimensions by 20 mm.

Please note
When ordering nitrogen gas springs for the connecting system, please add a **"V"** to the order number. **(Example: SZ 8060.1.050 x 025 V)**
(pricing available upon request)

Order example: Nitrogen gas spring
SZ 8060.1 with D = 38 and a stroke of 25 mm
supplement **038 x 025**
Order number **SZ 8060.1.038 x 025**



1 Piston rod
2 Oil and dirt wiper
3 Piston guide band
4 Mech. arrester
5 Piston guide band
6 Gas seal
7 Housing
8 High performance valve
9 O-ring
10 Base flange



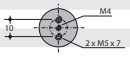
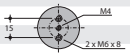
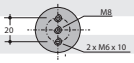
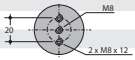
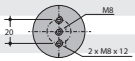
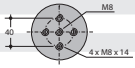
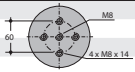
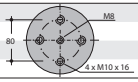
Flange for multiple-spring system from Ø 38

Gas Spring SZ 8060.1

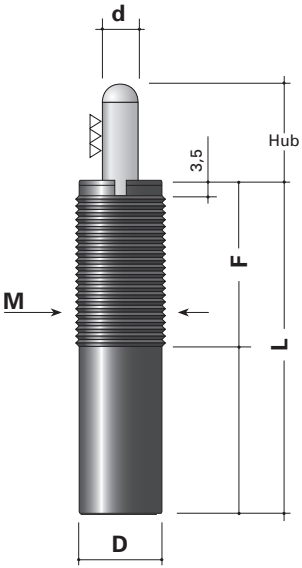
STEINEL NORMALIEN

Add size to order number

Gas spring — Order no. **SZ 8060.1.** ☐ x ☐

D	stroke	L	N	d	M	H				Cylinder attachment	
mm	mm	mm	mm	mm	mm	mm	bar	daN	daN		
25	10	65	75	14	M 8	12	157	400	730		**025 x 010**
	15	75	90								**025 x 015**
	25	95	120								**025 x 025**
	50	145	195								**025 x 050**
32	10	65	75	18	M 8	12	155	700	1230		**032 x 010**
	15	75	90								**032 x 015**
	25	95	120								**032 x 025**
	50	145	195								**032 x 050**
38	10	65	75	22	M 8	12	162	1000	1710		**038 x 010**
	15	75	90								**038 x 015**
	25	95	120								**038 x 025**
	50	145	195								**038 x 050**
50	10	70	80	34	M 8	12	159	2000	3400		**050 x 010**
	15	80	95								**050 x 015**
	25	100	125								**050 x 025**
	50	150	200								**050 x 050**
63	10	75	85	45	M 8	12	153	3000	4800		**063 x 010**
	15	85	100								**063 x 015**
	25	105	130								**063 x 025**
	50	155	205								**063 x 050**
75	10	75	85	55	M 8	12	142	4000	6400		**075 x 010**
	15	85	100								**075 x 015**
	25	105	130								**075 x 025**
	50	155	205								**075 x 050**
95	10	80	90	65	M 8	12	158	7000	11200		**095 x 010**
	15	90	105								**095 x 015**
	25	110	135								**095 x 025**
	50	160	210								**095 x 050**
120	10	90	100	85	M 8	12	141	10000	16000		**120 x 010**
	15	100	115								**120 x 015**
	25	120	145								**120 x 025**
	50	170	220								**120 x 050**

Gas spring SZ 8150.1.



Application:
Gas springs are used in tool manufacturing, fixture construction and machine construction primarily as a stamp pin, clamp, ejector or absorbing spring.

Special characteristics:
- High power in the smallest space
- Easy installation
- No spring failure

Installation note:
The gas spring should only be turned on/off using the proper special key SZ 8160.

The lock nut SZ 8055 can be used to fix and lock it. Table, see associated page.

Delivery with a full pressure of 150 bar. A low initial force can be achieved by discharging the gas.

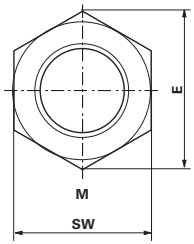
Order example: Gas spring
SZ 8150.1
with thread M=M 16 and stroke of 40 mm
Supplement: **16 x 040**
Order number **SZ 8150.1.16 x 040**

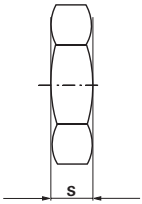
Add size to order number

Gas springs — Order **no. SZ 8150.1.** ☐ x ☐

M	Hub	L	F	D	d			
mm	mm	mm	mm	mm	mm	bar	daN	daN	
M 16 x 1,5	10	70	40	14	6	150	40	65	**016 x 010**
	20	80							**016 x 020**
	30	90							**016 x 030**
	40	100							**016 x 040**
	50	110							**016 x 050**
	60	120							**016 x 060**
	70	130							**016 x 070**
	80	140							**016 x 080**
	100	160							**016 x 100**
M 24 x 1,5	10	70	45	22	12	150	170	270	**024 x 010**
	20	80							**024 x 020**
	30	90							**024 x 030**
	40	100							**024 x 040**
	50	110							**024 x 050**
	60	120							**024 x 060**
	70	130							**024 x 070**
	80	140							**024 x 080**
	100	160							**024 x 100**

Accessories for gas springs





Lock nut SZ 8055.
for gas pressure spring SZ 8150.1.

Order example: Lock nut
SZ 8055
for thread M 16
Supplement **16**
Order number **SZ 8055.16**

Add size to order number

Lock nut				Order no. **SZ 8055.** ☐
M	**E**	**S**	**SW**	
M 16 x 1,5	26,75	8	24	**16**
M 24 x 1,5	35,72	10	32	**24**

Key SZ 8160
for gas pressure spring SZ 8150.1

Order example: key
SZ 8160
for thread M 16
Supplement **16**
Order number **SZ 8160.16**

Add size to order number

Key	Order no. **SZ 8160.** ☐
M	
M 16	**16**
M 24	**24**

Lubricant for piston rods
Molykote

100g tube
Order no. **SZ 9004**

Repair sets for gas springs

SZ 8080.1. / SZ 7080.1.REP

Consisting of:

- DS – attachment coupling
- Rod seal
- O-ring base
- Screw locking device
- High-performance oil
- Repair instructions
- Guide ring piston

Order example: Repair set for gas pressure spring **SZ 8080.1.019x...**

Order number **SZ 8080.1.019.REP**

Add size to order number

Order no. **SZ 8080.1.** □ x □

Ø 19	Ø 25	Ø 32	Ø 38	Ø 50	Ø 63	Ø 75	Ø 95	Ø 120
019.REP	025.REP	032.REP	038.REP	050.REP	063.REP	075.REP	095.REP	120.REP

Assembly tool for gas springs

SZ 8080.1. / SZ 7080.1.WKZ

Consisting of:

- Assembly tool for DS attachment
- Assembly tool for base
- Release bolt

Order example: Assembly tool for gas pressure spring **SZ 8080.1.019x...**

Order number **SZ 8080.1.019.WKZ**

Add size to order number

Order no. **SZ 8080.1.** □ x □

Ø 19	Ø 25	Ø 32	Ø 38	Ø 50	Ø 63	Ø 75	Ø 95	Ø 120
019.WKZ	025.WKZ	032.WKZ	038.WKZ	050.WKZ	063.WKZ	075.WKZ	095.WKZ	120.WKZ

Repair sets for gas springs
SZ 8066.1. / SZ 7066.1.REP

Consisting of:

- DS – attachment coupling
- Rod seal
- O-ring base
- Screw locking device
- High-performance oil
- Repair instructions
- Guide ring piston

Order example: Repair set for gas spring **SZ 8066.1.019x...**

Order number **SZ 8066.1.019.REP**

Add size to order number

Order no. **SZ 8066.1.** □ x □

Ø 19	Ø 25	Ø 32	Ø 38	Ø 50	Ø 63	Ø 75	Ø 95	Ø 120
019.REP	025.REP	032.REP	038.REP	050.REP	063.REP	075.REP	095.REP	120.REP

Assembly tool for gas springs
SZ 8066.1. / SZ 7066.1.WKZ

Consisting of:

- Assembly tool for DS attachment
- Assembly tool for base
- Release bolt

Order example: Assembly tool for gas spring **SZ 8066.1.019x...**

Order number **SZ 8066.1.019.WKZ**

Add size to order number

Order no. **SZ 8066.1.** □ x □

Ø 19	Ø 25	Ø 32	Ø 38	Ø 50	Ø 63	Ø 75	Ø 95	Ø 120
019.WKZ	025.WKZ	032.WKZ	038.WKZ	050.WKZ	063.WKZ	075.WKZ	095.WKZ	120.WKZ

Repair sets for gas springs

SZ 8065.1.REP

Consisting of:

- DS – attachment coupling
- Rod seal
- O-ring base
- Screw locking device
- High-performance oil
- Repair instructions
- Guide ring piston

Order example: Repair set for gas spring **SZ 8065.1.019x...**

Order number **SZ 8065.1.019.REP**

Add size to order number

Order no. **SZ 8065.1.** □ x □

Ø 19	Ø 25	Ø 32	Ø 38	Ø 50	Ø 63	Ø 75	Ø 95	Ø 120
019.REP	025.REP	032.REP	038.REP	050.REP	063.REP	075.REP	095.REP	120.REP

Assembly tool for gas springs

SZ 8065.1.WKZ

Consisting of:

- Assembly tool for DS attachment
- Assembly tool for base
- Release bolt

Order example: Assembly tool for gas spring **SZ 8065.1.019x...**

Order number **SZ 8065.1.019.WKZ**

Add size to order number

Order no. **SZ 8065.1.** □ x □

Ø 19	Ø 25	Ø 32	Ø 38	Ø 50	Ø 63	Ø 75	Ø 95	Ø 120
019.WKZ	025.WKZ	032.WKZ	038.WKZ	050.WKZ	063.WKZ	075.WKZ	095.WKZ	120.WKZ

Repair sets for gas springs

SZ 8060.1.REP

Consisting of:

- Wiper
- Piston guide
- Rod guide
- Safety ring
- Piston seal
- O-ring base
- Screw locking device
- High-performance oil
- Repair instructions
- Guide ring piston

Order example: Repair set for gas spring **SZ 8060.1.025x...**

Order number **SZ 8060.1.025.REP**

Add size to order number

Order no. **SZ 8060.1.** □ x □

Ø 25	Ø 32	Ø 38	Ø 50	Ø 63	Ø 75	Ø 95	Ø 120
025.REP	032.REP	038.REP	050.REP	063.REP	075.REP	095.REP	120.REP

Assembly tool for gas springs

SZ 8060.1.WKZ

Consisting of:

- Assembly tool for base
- Release bolt

Order example: Assembly tool for gas spring **SZ 8060.1.025x...**

Order number **SZ 8060.1.025.WKZ**

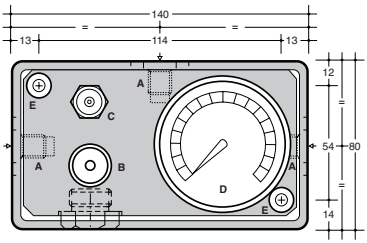
Add size to order number

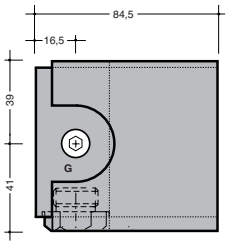
Order no. **SZ 8060.1.** □ x □

Ø 25	Ø 32	Ø 38	Ø 50	Ø 63	Ø 75	Ø 95	Ø 120
025.WKZ	032.WKZ	038.WKZ	050.WKZ	063.WKZ	075.WKZ	095.WKZ	120.WKZ

Control systems

Control unit and safety valve



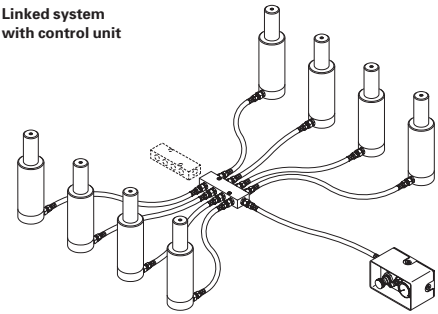


A 3 mounting holes
B Outlet valve
C Inlet valve
D Manometer
E 2 mounting holes diameter 8.5
G Mounting holes are plugged

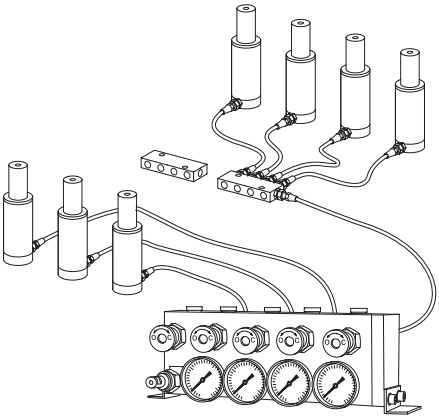
Order no. **SZ 8098**

Linked system for gas springs

Linked system with control unit



Linked system with modular control unit



System-networked cylinders

These cylinders are connected up to each other, which means they exert identical forces since they are part of the same closed circuit, which has a constant pressure at all points. The control unit with pressure gauge shows the machine's system pressure in real time, and enables this pressure to be adjusted if necessary. In the case of small system losses, you can intervene by recharging with nitrogen, without having to stop the machine or open the tool.

A safety valve can also be fitted to the control panel. This activates an alarm or stops the machine or tool immediately, if for any reason the pressure falls below the defined level.

As already mentioned, the cylinders described in this catalogue can be connected together (from Ø 38 upwards), thus creating a system of cylinders connected by tubes and connectors, as shown here.

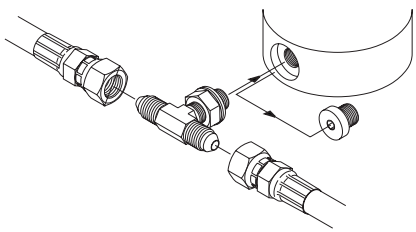
To set up a networked system of several cylinders, proceed as follows:

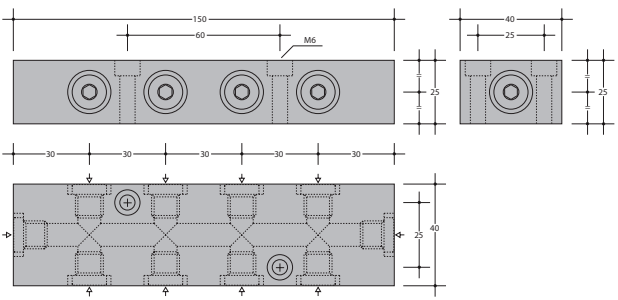
Begin by releasing the gas from the cylinder.

Make sure that all of the gas has escaped by pressing the piston into the chamber by hand.

Next, remove the plug at the side using a 5 mm Allen key, then fit a suitable connector. You can then connect the cylinders up to the control unit.

Cylinder connection

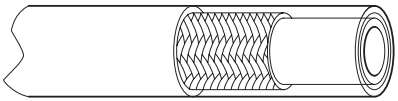


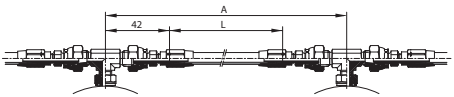


The switching units enable several cylinders to be networked without having to use T-joints and knees on the cylinders.

Each unit can connect eight cylinders of any size, and the units can be connected to one another (theoretically there is no limit to the number of cylinders that can be connected together).

Switching unit
Order no. **SZ 8091**





Tubing for self-assembly

Order no.: **SZ 7010.08**

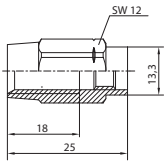
Please specify the length of tubing required in metres

The tubing's mechanical specifications are as follows:
- Operating temperature: - 40 + 93 °C
- Operating pressure: max. 415 bar
- Minimum bend radius: 30 mm
- Outside diameter: 8 mm

Calculating the tube length:

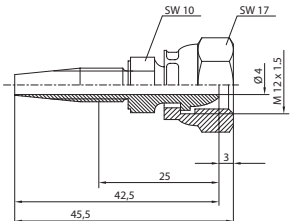
L = (A - 84) x 1,05

L = Length of tube not including screw fitting
A = Distance between the cylinders being connected



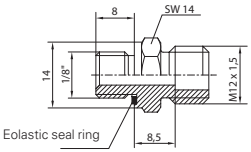
Screw sleeve

Order no. **SZ 7011.08**



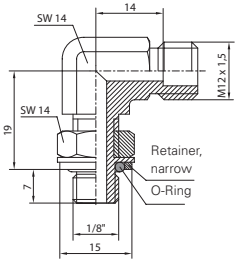
F-insert with spherical joint

Order no. **SZ 7012.08**



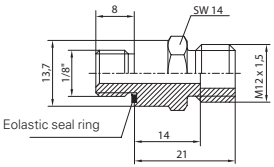
Straight screw-in joint

Order no. **SZ 7013.06**



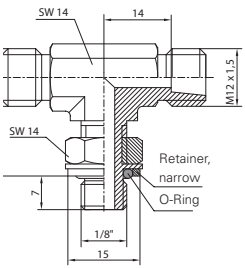
Adjustable angle joint with locknut

Order no. **SZ 7014.06**



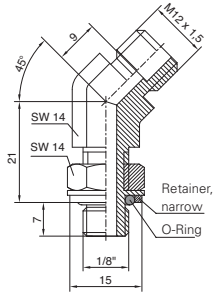
Straight screw-in joint, long

Order no. **SZ 7020.06**



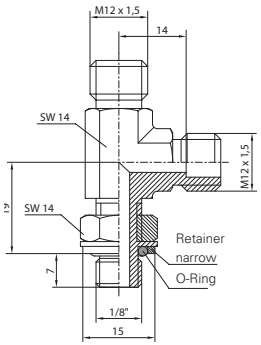
Adjustable T-joint with locknut

Order no. **SZ 7015.06**



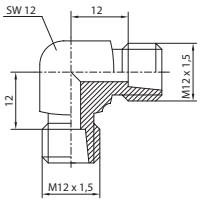
Adjustable 45° angle joint with locknut

Order no. **SZ 7016.06**



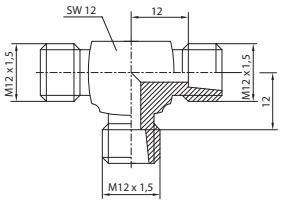
Adjustable L-joint with locknut

Order no.
SZ 7017.06



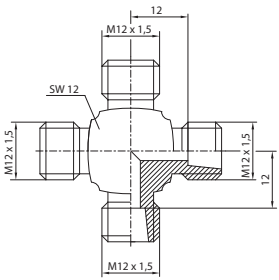
Angle joint

Order no.
SZ 7021.06



T-joint

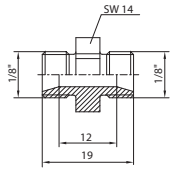
Order no.
SZ 7022.06



Cross-joint

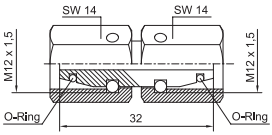
Order no.
SZ 7023.06

Gas spring piping
Special parts



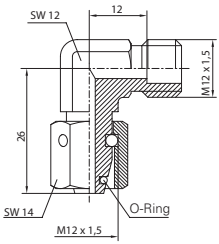
Adapter 1/8" – 1/8"

Order no.
SZ 7019.06



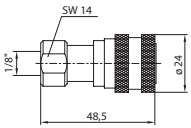
Straight intermediate connector with seal pin

Order no.
SZ 7033.06



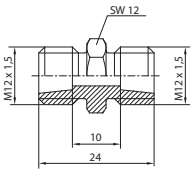
Angle joint with seal pin

Order no.
SZ 7034.06



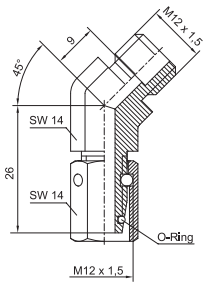
Quick-release sleeve

Order no.
SZ 7041.01



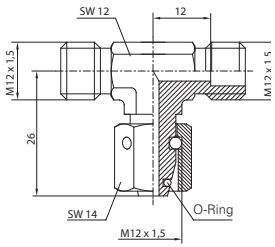
Straight joint

Order no.
SZ 7024.06



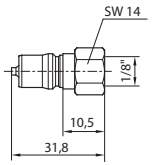
45° angle joint with seal pin

Order no.
SZ 7036.06



T-joint with seal pin

Order no.
SZ 7035.06



Quick-release plug

Order no.
SZ 7042.01

Force measuring device SZ 8079

Force measuring device for gas springs up to 6300 daN

Design:
Frame incorporating hydraulic pump and various adapters.

Use:
This force measuring device can be used to test gas springs of all types with diameters of up to 120 mm and initial forces of up to 6300 daN.

There are also three different force gauges (SZ 8078) which are interchangeable and must be ordered separately as required.
Measuring range 25 – 250 daN (SZ 8078.00250)
Measuring range 100 – 1000 daN (SZ 8078.01000)
Measuring range 630 – 6300 daN (SZ 8078.06300)

A 1600 – 16000 daN gauge is available for higher-pressure gas springs. This gauge can be used on a press to test larger gas springs.

Note:
Order the force gauge separately.

Test procedure:
Fit the force gauge with the required measuring range.
Use distance bolts to adjust the height.
Position gas spring in appropriate holder.
Test force by pumping up the hydraulic cylinder.
Once the force test is complete, open the valve on the hydraulic cylinder and press the cylinder down. Remove the gas spring.

Order no. **SZ 8079**

Force gauge SZ 8078

Force gauge

Interchangeable force gauge for force measuring device SZ 8079

Measuring range:
25 – 250 daN
100 – 1000 daN
630 – 6300 daN
1600 – 16000 daN (do not use with force measuring device)

Ordering example: force gauge **SZ 8078**
Measuring range = 100 – 1000 daN
Extension **01000**
Order number **SZ 8078.01000**

Add size to order number

Force gauge	Order no. **SZ 8078.** ☐
Measuring range in daN	
25 – 250	**00250**
100 – 1000	**01000**
630 – 6300	**06300**
1600 – 16000	**16000**

The North American Rep For Steinel Products

Sales / Support
Office: (847) 386-1559
Fax: (314) 754-9162
Email: sales@champion-dietool.com
Website: www.champion-dietool.com

"One Thing Matters Above All Else - QUALITY"
Made In Germany