

DURASPRING SPIRAL SPRINGS

Spiral Springs are commonly used for the durable protection of ballscrews and shafts. DURASPRING Spiral Springs are produced using spring steel. The steel strip is roll formed to produce the spiral spring.

The advantages of DURASPRING are:

- High quality spring steel
- Tandem installation of multiple springs is possible
- Retrofit possible
- Special oil for enhanced life
- Production certified according to ISO 9000:2008
- Anti-corrosive packaging



DURASPRING in standard and stainless steel

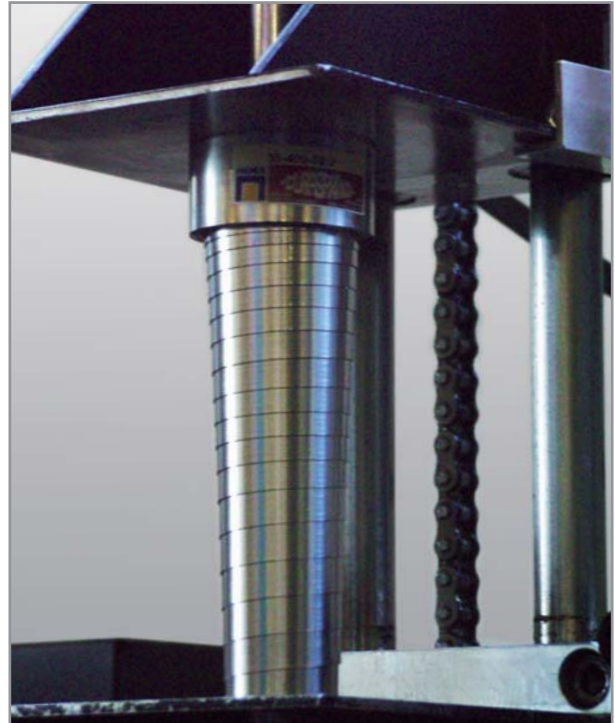
DURASPRING Spiral Springs are available in two versions:

- **DURASPRING BLUE** - standard spring, blue steel
- **DURASPRING SILVER** - stainless steel version

If the spiral springs are exposed regularly to coolants with a high proportion of water, then stainless steel band should be used. Stainless spiral springs have lower spring forces and therefore cannot be manufactured in all sizes. We use spring band steel of extreme hardness (55-58 Rockwell) with chamfered edges and a strength of up to 1800 N/mm² for our standard spiral springs. Band steel in thicknesses from 0.2 to 1.0 mm will be selected in accordance to size and application. Since this is documented within our quality system, reproducibility is also guaranteed when re-ordering.



DURASPRING label with article number



Testing of DURASPRING Spiral Springs

Dimensions

The standard range now comprises springs in dimensions from 15 mm up to 160 mm internal diameter. Special dimensions are available on request. Spiral springs for vertical use can be produced up to an extended length of 4500 mm.

Speed

DURASPRING is designed as standard for speeds up to 40 metres/minute. Special solutions with almost twice the speed are achieved in individual robotics applications. The optimum operating conditions for DURASPRING is in applications with oil. Bellows should be used alternatively for fine particles and dust.

Maintenance/Cleaning

Decisive factors in assessing the quality of spiral springs are the smoothness of travel, and even consistency of the overlapping turns. The quality of each DURASPRING is assured with the aid of our testing machines. Each spring is tested for its running properties prior to despatch. Maintenance of the springs is necessary. Cleaning the springs according to the degree of contamination and then applying a light oil film is recommended. Available for this purpose is DURASPRING LONGLIFE special oil.

Please pay attention to the mounting and maintenance information supplied with each shipment.

DURASPRING SPIRAL SPRINGS

Installation/operating position

DURASPRING Spiral springs can be installed in both, horizontal and vertical applications:

- Horizontal installation
- Vertical installation

Our DURASPRING Spiral Springs are manufactured specifically to suit horizontal or vertical operation.

For horizontal applications, the extension is reduced (see tabulations).

Horizontal installation

Springs used horizontally are formed for particularly for uniform running in that the overlap between coils is increased. In this way »sagging« is reduced, particularly for longer extension lengths, and transverse stability is significantly improved.

In the case of horizontal installation of the springs, placing the larger diameter adjacent to the area of swarf production is recommended.

Vertical installation

As a matter of principle, vertically installed DURASPRING achieve larger extension lengths than horizontal types.

The critical design factor for this type is the force produced, as the springs must also work against gravity.

Vertical types therefore have a high starting force, guaranteeing that the DURASPRING draws out rapidly when starting/ extending with the machine movement.

For efficient protection and optimum operation, vertical spirals should be mounted with the large diameter at the top.

Flanges (optional)

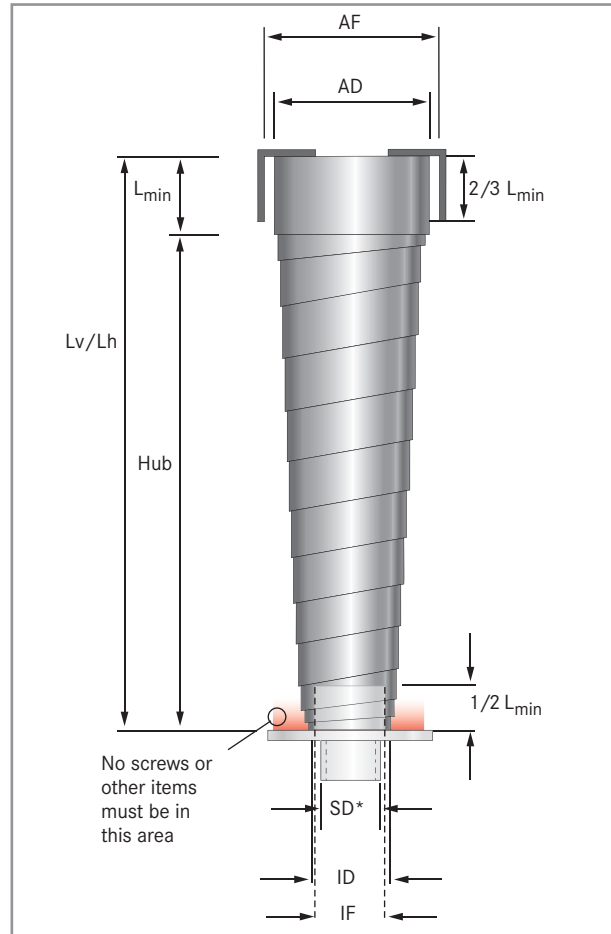
Simple centring flanges are required at both ends of the DURASPRING for installation (see order sheet).

These flanges must permit rotary movements of the spring that may occur, in order to prevent damage to the springs. The springs must be guided so that they can move freely. It is not permitted to screw and/or rivet them.

When using flanges, the spindle diameter SD is reduced by 6 mm compared to the values given on the following pages.



DURASPRING Silver in stainless steel



Legend

SD	Maximum outside diameter of the part to be covered *value is reduced by 6 mm when using flanges
ID	Inside diameter of spiral spring (± 1 mm)
AD	Outside diameter of spiral spring (± 2 mm)
Lh	Maximum extension length for horizontal installation position
Lv	Maximum extension length for vertical installation position
BB	Band width, corresponds to L_{min}
SILVER	sizes also in DURASPRING Silver available
na	not available

Calculations for flanges

Centering flange (deliverable on demand):

AF	Interior diameter of the larger centering flange $AD + 4\text{mm}$
IF	Outer diameter of the smaller centering flange $ID - 2\text{mm}$
Option	through-boring of the flange $SD + 2\text{mm}$

SERVICE & QUALITY 02

STANDARD BELLOWS 08

SAUWRAI BELLOWS 18

SPECIAL BELLOWS 26

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GLADIATOR STEEL COVERS 38

ROLLER SYSTEMS 46

DURASPRING SPIRAL SPRINGS 59

VIEWING SYSTEMS 68

DURASPRING SPIRAL SPRINGS

	DURASPRING	SD*	ID	AD	Lh	Lv	BB		
02	15-70-20	11	15	22	na	70	20	SERVICE & QUALITY	
	15-100-20	11	15	22	60	100	20		
	15-120-20	11	15	22	90	120	20		
08	15-150-20	11	15	28	110	150	20	STANDARD BELLOWS	
	15-200-20	11	15	31	160	200	20		
	15-300-20	11	15	32	260	300	20		
18	20-100-20	SILVER	16	20	30	100	20	SAUMIRAI BELLOWS	
	20-150-20	SILVER	16	20	33	110	20		
	20-200-20	SILVER	16	20	36	160	20		
	20-250-20	SILVER	16	20	39	210	20		
	20-300-20	SILVER	16	20	41	260	300		20
26	20-250-30		16	20	36	210	30	SPECIAL BELLOWS	
	20-300-30	SILVER	16	20	39	260	300		30
	20-350-30	SILVER	16	20	41	310	350		30
	20-400-30	SILVER	16	20	43	360	400		30
	20-400-40		16	20	35	360	400		40
34	20-450-40		16	20	41	410	450	40	BACKWALL SYSTEMS
	20-500-40	SILVER	16	20	48	460	500	40	
	25-100-20	SILVER	21	25	36	60	100	20	
	25-150-20	SILVER	21	25	38	110	150	20	
	25-200-20	SILVER	21	25	40	160	200	20	
38	25-250-20	SILVER	21	25	44	210	250	20	GLADIATOR STEEL COVERS
	25-300-20		21	25	46	260	300	20	
	25-300-30	SILVER	21	25	42	240	300	30	
	25-350-30	SILVER	21	25	45	290	350	30	
	25-400-30		21	25	48	340	400	30	
46	25-450-30	SILVER	21	25	49	390	450	30	ROLLER SYSTEMS
	25-450-40	SILVER	21	25	48	370	450	40	
	25-500-40	SILVER	21	25	49	420	500	40	
	25-450-50		21	25	41	390	450	50	
	25-550-50	SILVER	21	25	43	490	550	50	
60	25-600-50		21	25	44	540	600	50	DURASPRING SPIRAL SPRINGS
	25-650-50	SILVER	21	25	45	590	650	50	
	25-750-50		21	25	47	690	750	50	
	25-900-50	SILVER	21	25	57	840	900	50	
	30-150-30		26	30	39	90	150	30	
68	30-200-30	SILVER	26	30	42	140	200	30	VIEWING SYSTEMS
	30-250-30	SILVER	26	30	44	190	250	30	
	30-300-30	SILVER	26	30	46	240	300	30	
	30-350-30	SILVER	26	30	49	290	350	30	
	30-400-30	SILVER	26	30	50	340	400	30	
	30-450-30	SILVER	26	30	53	390	450	30	
	30-450-40	SILVER	26	30	53	370	450	40	
	30-500-40	SILVER	26	30	55	440	500	40	
	30-550-40	SILVER	26	30	58	490	550	40	
	30-600-40		26	30	58	540	600	40	
30-650-40		26	30	60	590	650	40		
30-700-40	SILVER	26	30	64	640	700	40		
30-150-50	SILVER	26	30	40	90	150	50		
30-250-50	SILVER	26	30	42	190	250	50		
30-350-50		26	30	45	290	350	50		
30-450-50	SILVER	26	30	46	390	450	50		
30-550-50	SILVER	26	30	48	490	550	50		
30-650-50	SILVER	26	30	55	590	650	50		
30-750-50	SILVER	26	30	58	690	750	50		
30-850-50		31	35	65	790	850	50		
30-450-60		31	35	53	390	450	60		
35-100-20		31	35	45	60	100	20		
35-100-30		31	35	44	60	100	30		
35-150-30	SILVER	31	35	48	90	150	30		
35-200-30	SILVER	31	35	50	140	200	30		
35-250-30		31	35	52	190	250	30		
35-300-30	SILVER	31	35	55	240	300	30		
35-350-30	SILVER	31	35	61	290	350	30		
35-400-30	SILVER	31	35	63	340	400	30		
35-300-40	SILVER	31	35	48	240	300	40		
35-350-40	SILVER	31	35	50	290	350	40		
35-400-40	SILVER	31	35	54	340	400	40		
35-450-40	SILVER	31	35	58	390	450	40		
35-500-40		31	35	60	440	500	40		
35-550-40		31	35	62	490	550	40		
35-350-50		31	35	51	290	350	50		
35-400-50	SILVER	31	35	52	340	400	50		
35-450-50		31	35	54	390	450	50		
35-500-50	SILVER	31	35	55	440	500	50		
35-550-50	SILVER	31	35	57	na	550	50		
35-650-50	SILVER	31	35	60	590	650	50		
35-750-50	SILVER	31	35	64	690	750	50		

Standard sizes, other sizes on request. All dimension in mm.

DURASPRING SPIRAL SPRINGS

DURASPRING	SD*	ID	AD	Lh	Lv	BB
35-550-60	31	35	56	490	550	60
35-650-60 SILVER	31	35	59	590	650	60
35-750-60	31	35	60	690	750	60
35-850-60 SILVER	31	35	65	790	850	60
35-550-75	31	35	54	490	550	75
35-650-75	31	35	55	590	650	75
35-750-75	31	35	57	690	750	75
35-850-75 SILVER	31	35	59	790	850	75
40-150-30 SILVER	36	40	51	90	150	30
40-250-30 SILVER	36	40	56	190	250	30
40-350-30 SILVER	36	40	60	290	350	30
40-450-30 SILVER	36	40	64	390	450	30
40-350-40	36	40	61	290	350	40
40-400-40	36	40	63	340	400	40
40-450-40 SILVER	36	40	64	390	450	40
40-500-40 SILVER	36	40	65	440	500	40
40-550-40 SILVER	36	40	68	490	550	40
40-350-50 SILVER	36	40	56	250	350	50
40-450-50 SILVER	36	40	59	350	450	50
40-550-50 SILVER	36	40	61	450	550	50
40-650-50 SILVER	36	40	65	550	650	50
40-750-50 SILVER	36	40	69	650	750	50
40-850-50 SILVER	36	40	71	750	850	50
40-350-60 SILVER	36	40	55	230	350	60
40-450-60 SILVER	36	40	58	450	450	60
40-550-60 SILVER	36	40	59	430	550	60
40-650-60 SILVER	36	40	62	530	650	60
40-750-60 SILVER	36	40	66	630	750	60
40-900-60 SILVER	36	40	70	780	900	60
40-650-75	36	40	63	500	650	75
40-750-75 SILVER	36	40	66	600	750	75
40-900-75 SILVER	36	40	71	750	900	75
40-1100-75 SILVER	36	40	78	950	1100	75
40-1300-75 SILVER	36	40	84	1150	1300	75
40-1500-75 SILVER	36	40	90	na	1500	75
40-1000-100 SILVER	36	40	68	800	1000	100
40-1200-100 SILVER	36	40	71	1000	1200	100
40-1300-100	36	40	75	1100	1300	100
40-1400-100	36	40	76	1200	1400	100
40-1500-100 SILVER	36	40	78	1300	1500	100
40-1600-100	36	40	81	1400	1600	100

Standard sizes, other sizes on request. All dimension in mm.

DURASPRING	SD*	ID	AD	Lh	Lv	BB
40-1800-100 SILVER	36	40	82	1600	1800	100
40-1800-120	36	40	82	1560	1800	120
40-2000-120	36	40	86	1760	2000	120
40-2200-120	36	40	90	na	2200	120
45-150-30 SILVER	41	45	56	90	150	30
45-250-30 SILVER	41	45	61	190	250	30
45-350-30 SILVER	41	45	65	290	350	30
45-400-30 SILVER	41	45	66	340	400	30
45-350-40	41	45	65	290	350	40
45-400-40	41	45	68	340	400	40
45-450-40 SILVER	41	45	69	390	450	40
45-450-50 SILVER	41	45	66	350	450	50
45-550-50 SILVER	41	45	68	450	550	50
45-650-50 SILVER	41	45	75	550	650	50
45-350-60	41	45	63	230	350	60
45-450-60 SILVER	41	45	65	330	450	60
45-550-60	41	45	65	430	550	60
45-650-60	41	45	69	530	650	60
45-700-60 SILVER	41	45	70	630	700	60
45-650-75 SILVER	41	45	67	500	650	75
45-750-75 SILVER	41	45	76	600	750	75
45-900-75 SILVER	41	45	78	750	900	75
45-1100-75 SILVER	41	45	84	950	1100	75
45-1200-75	41	45	86	1150	1200	75
45-1300-75	41	45	89	na	1300	75
45-1000-100	41	45	71	800	1000	100
45-1200-100	41	45	75	1000	1200	100
45-1300-100	41	45	79	1100	1300	100
45-1400-100	41	45	81	1200	1400	100
45-1500-100	41	45	83	1300	1500	100

Legend

SD	Maximum outside diameter of the part to be covered *value is reduced by 6 mm when using flanges
ID	Inside diameter of spiral spring (±1 mm)
AD	Outside diameter of spiral spring (±2 mm)
Lh	Maximum extension length for horizontal installation position
Lv	Maximum extension length for vertical installation position
BB	Band width, corresponds to L _{min}
SILVER	sizes also in DURASPRING Silver available
na	not available

All dimensions in mm if not marked otherwise. Errors and omissions excepted.

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DURASPRING SPIRAL SPRINGS

	DURASPRING	SD*	ID	AD	Lh	Lv	BB
02	45-1600-100	41	45	87	1400	1600	100
	45-1800-100	41	45	87	na	1800	100
	45-1800-120	41	45	87	1560	1800	120
08	45-2000-120	41	45	91	1760	2000	120
	45-2200-120 SILVER	41	45	100	na	2200	120
	50-150-30 SILVER	46	50	63	90	150	30
18	50-250-30 SILVER	46	50	68	190	250	30
	50-350-30 SILVER	46	50	73	290	350	30
	50-250-50 SILVER	46	50	62	150	250	50
26	50-350-50 SILVER	46	50	66	250	350	50
	50-450-50 SILVER	46	50	70	350	450	50
	50-550-50 SILVER	46	50	73	450	550	50
34	50-650-50 SILVER	46	50	76	550	650	50
	50-350-60 SILVER	46	50	66	230	350	60
	50-450-60	46	50	65	330	450	60
38	50-550-60 SILVER	46	50	68	430	550	60
	50-600-60 SILVER	46	50	72	480	600	60
	50-650-60 SILVER	46	50	73	530	650	60
46	50-750-60 SILVER	46	50	80	630	750	60
	50-900-60 SILVER	46	50	81	780	900	60
	50-750-75 SILVER	46	50	78	600	750	75
62	50-900-75 SILVER	46	50	84	750	900	75
	50-1100-75	46	50	90	950	1100	75
	50-1200-75	46	50	94	1050	1200	75
68	50-1100-100 SILVER	46	50	77	900	1100	100
	50-1300-100 SILVER	46	50	80	1100	1300	100
	50-1500-100 SILVER	46	50	88	1300	1500	100
DURASPRING SPIRAL SPRINGS	50-1600-100	46	50	89	1400	1600	100
	50-1700-100	46	50	91	na	1700	100
	50-1800-100 SILVER	46	50	94	na	1800	100
	50-1700-120	46	50	91	1460	1700	120
	50-1900-120 SILVER	46	50	96	1660	1900	120
	50-2100-120 SILVER	46	50	100	1860	2100	120
	50-2300-120	46	50	105	na	2300	120
	50-2500-120	46	50	115	na	2500	120
	50-2800-120	46	50	118	na	2800	120
	50-2500-150	46	50	116	2200	2500	150
	50-2800-150	46	50	118	2500	2800	150
	50-3000-150	46	50	123	2500	3000	150
VIEWING SYSTEMS	50-3000-180	46	50	123	2640	3000	180
	50-3250-180	46	50	128	na	3250	180

DURASPRING	SD*	ID	AD	Lh	Lv	BB
50-3250-200	46	50	128	2850	3250	200
50-3500-200	46	50	134	na	3500	200
55-150-30 SILVER	51	55	67	90	150	30
55-250-30 SILVER	51	55	73	190	250	30
55-300-40	51	55	71	220	300	40
55-450-40 SILVER	51	55	76	370	450	40
55-250-50 SILVER	51	55	66	150	250	50
55-350-50 SILVER	51	55	71	250	350	50
55-450-50 SILVER	51	55	74	350	450	50
55-550-50 SILVER	51	55	78	450	550	50
55-650-50	51	55	80	450	650	50
55-550-60 SILVER	51	55	75	430	550	60
55-650-60 SILVER	51	55	79	530	650	60
55-750-60 SILVER	51	55	83	630	750	60
55-800-60	51	55	86	680	800	60
55-900-60 SILVER	51	55	89	780	900	60
55-1000-60 SILVER	51	55	92	na	1000	60
55-600-75 SILVER	51	55	80	450	600	75
55-750-75 SILVER	51	55	83	600	750	75
55-900-75 SILVER	51	55	89	750	900	75
55-1100-75 SILVER	51	55	94	950	1100	75
55-1100-100 SILVER	51	55	85	900	1100	100
55-1300-100	51	55	89	1100	1300	100
55-1500-100	51	55	94	1300	1500	100
55-1800-100 SILVER	51	55	102	1600	1800	100
55-1300-120	51	55	92	1060	1300	120
55-1500-120	51	55	94	1260	1500	120
55-1700-120	51	55	96	1460	1700	120
55-1900-120	51	55	100	1660	1900	120
55-2100-120	51	55	105	1860	2100	120
55-2300-120 SILVER	51	55	110	2060	2300	120
55-2500-120	51	55	116	2200	2500	120
55-2800-120	51	55	123	2500	2800	120
55-2500-150	51	55	118	2200	2500	150
55-2800-150	51	55	121	2500	2800	150
55-3000-150	51	55	126	na	3000	150
55-3500-150	51	55	130	2500	3500	150
55-2800-180	51	55	114	2500	2800	180
55-3000-180	51	55	126	2640	3000	180
55-3250-180	51	55	130	2500	3250	180
55-3500-200	51	55	137	na	3500	180

Standard sizes, other sizes on request. All dimension in mm.

DURASPRING SPIRAL SPRINGS

DURASPRING	SD*	ID	AD	Lh	Lv	BB	
60-150-30	SILVER	56	60	73	90	150	30
60-250-30	SILVER	56	60	78	190	250	30
60-250-50	SILVER	56	60	73	150	250	50
60-350-50	SILVER	56	60	78	250	350	50
60-450-50	SILVER	56	60	82	350	450	50
60-550-50		56	60	85	450	550	50
60-450-60	SILVER	56	60	78	430	450	60
60-550-60	SILVER	56	60	81	430	550	60
60-650-60	SILVER	56	60	85	530	650	60
60-750-60	SILVER	56	60	89	630	750	60
60-800-60	SILVER	56	60	96	680	800	60
60-900-60	SILVER	56	60	98	na	900	60
60-750-75	SILVER	56	60	89	600	750	75
60-900-75	SILVER	56	60	95	750	900	75
60-1100-75	SILVER	56	60	102	950	1100	75
60-1300-75		56	60	104	1150	1300	75
60-900-100		56	60	85	700	900	100
60-1100-100	SILVER	56	60	90	900	1100	100
60-1300-100	SILVER	56	60	94	1100	1300	100
60-1500-100	SILVER	56	60	100	1300	1500	100
60-1800-100	SILVER	56	60	109	1600	1800	100
60-1700-120		56	60	101	1460	1700	120
60-1900-120	SILVER	56	60	104	1660	1900	120
60-2100-120	SILVER	56	60	108	1860	2100	120
60-2300-120		56	60	114	2060	2300	120
60-2500-120	SILVER	56	60	118	2300	2500	120
60-2800-120		56	60	126	2500	2800	120
60-2500-150	SILVER	56	60	118	2300	2500	150
60-2800-150		56	60	123	2500	2800	150
60-3000-150		56	60	128	na	3000	150
60-3500-150		56	60	138	na	3500	150
60-3000-180		56	60	126	2640	3000	180
60-3250-180		56	60	132	na	3250	180
60-3250-200		56	60	132	2850	3250	200
60-3500-200		56	60	139	na	3500	200
65-100-30		61	65	76	90	100	30
65-150-30	SILVER	61	65	78	90	150	30
65-250-30	SILVER	61	65	85	190	250	30
65-250-50	SILVER	61	65	76	150	250	50
65-350-50	SILVER	61	65	84	250	350	50
65-450-50	SILVER	61	65	88	350	450	50

Standard sizes, other sizes on request. All dimension in mm.

DURASPRING	SD*	ID	AD	Lh	Lv	BB	
65-550-50	SILVER	61	65	92	450	550	50
65-500-60	SILVER	61	65	86	380	500	60
65-550-60	SILVER	61	65	88	430	550	60
65-650-60	SILVER	61	65	93	530	650	60
65-700-60	SILVER	61	65	94	580	700	60
65-750-60	SILVER	61	65	95	630	750	60
65-800-60	SILVER	61	65	98	680	800	60
65-900-60		61	65	103	780	900	60
65-750-75	SILVER	61	65	93	600	750	75
65-800-75	SILVER	61	65	96	650	800	75
65-900-75	SILVER	61	65	99	750	900	75
65-1100-75	SILVER	61	65	107	900	1100	75
65-1300-75		61	65	111	1100	1300	75
65-1500-75	SILVER	61	65	115	na	1500	75
65-1000-100	SILVER	61	65	91	800	1000	100
65-1100-100	SILVER	61	65	95	900	1100	100
65-1300-100	SILVER	61	65	99	1100	1300	100
65-1500-100	SILVER	61	65	108	1300	1500	100
65-1700-100	SILVER	61	65	113	na	1700	100
65-1800-100	SILVER	61	65	119	1600	1800	100
65-1500-120	SILVER	61	65	100	1260	1500	120
65-1700-120		61	65	106	1460	1700	120
65-1900-120	SILVER	61	65	109	1660	1900	120
65-2100-120	SILVER	61	65	113	1860	2100	120
65-2300-120		61	65	118	2060	2300	120
65-2500-120	SILVER	61	65	128	2300	2500	120
65-2800-120	SILVER	61	65	134	2500	2800	120
65-2400-150	SILVER	61	65	120	2100	2400	150
65-2800-150		61	65	132	2500	2800	150
65-3000-150		61	65	142	2500	3000	150

Legend

SD	Maximum outside diameter of the part to be covered *value is reduced by 6 mm when using flanges
ID	Inside diameter of spiral spring (± 1 mm)
AD	Outside diameter of spiral spring (± 2 mm)
Lh	Maximum extension length for horizontal installation position
Lv	Maximum extension length for vertical installation position
BB	Band width, corresponds to L_{min}
SILVER	sizes also in DURASPRING Silver available
na	not available

All dimensions in mm if not marked otherwise. Errors and omissions excepted.

SERVICE & QUALITY	02
STANDARD BELLOWS	08
SAUMRAI BELLOWS	18
SPECIAL BELLOWS	26
BACKWALL SYSTEMS	36
GLADIATOR STEEL COVERS	38
ROLLER SYSTEMS	46
DURASPRING SPIRAL SPRINGS	63
VIEWING SYSTEMS	68

DURASPRING SPIRAL SPRINGS

	DURASPRING	SD*	ID	AD	Lh	Lv	BB		DURASPRING	SD*	ID	AD	Lh	Lv	BB
02	65-3000-180	61	65	136	2640	3000	180	SERVICE & QUALITY	70-3000-180	66	70	141	na	3000	180
	65-3250-180	61	65	145	na	3250	180		70-3250-180	66	70	152	2500	3250	180
	65-3250-200	61	65	138	2850	3250	200		70-3250-200	66	70	144	2500	3250	200
	65-3500-200	61	65	148	na	3500	200		70-3500-200	66	70	155	2500	3500	200
08	70-150-30 SILVER	66	70	85	90	150	30	STANDARD BELLOWS	75-150-30 SILVER	71	75	92	90	150	30
	70-250-30 SILVER	66	70	93	190	250	30		75-250-30 SILVER	71	75	98	190	250	30
	70-350-30	66	70	99	290	350	30		75-250-50 SILVER	71	75	89	150	250	50
18	70-250-50 SILVER	66	70	85	150	250	50	SAUMIRAI BELLOWS	75-350-50 SILVER	71	75	94	250	350	50
	70-350-50 SILVER	66	70	89	250	350	50		75-450-50 SILVER	71	75	101	350	450	50
	70-450-50 SILVER	66	70	94	350	450	50		75-500-50 SILVER	71	75	105	400	500	50
	70-550-50 SILVER	66	70	97	450	550	50		75-550-60 SILVER	71	75	100	430	550	60
26	70-650-50	66	70	100	na	650	50	SPECIAL BELLOWS	75-650-60 SILVER	71	75	103	530	650	60
	70-550-60 SILVER	66	70	94	430	550	60		75-750-60 SILVER	71	75	109	630	750	60
	70-650-60 SILVER	66	70	97	530	650	60		75-650-75 SILVER	71	75	99	500	650	75
	70-750-60 SILVER	66	70	102	630	750	60		75-750-75 SILVER	71	75	104	600	750	75
34	70-900-60	66	70	113	800	900	60	BACKWALL SYSTEMS	75-900-75 SILVER	71	75	111	750	900	75
	70-500-75 SILVER	66	70	91	350	500	75		75-1000-75 SILVER	71	75	114	850	1000	75
	70-600-75	66	70	94	450	600	75		75-1100-75 SILVER	71	75	118	950	1100	75
	70-700-75	66	70	98	550	700	75		75-900-100 SILVER	71	75	102	na	900	100
38	70-750-75 SILVER	66	70	98	550	700	75	GLADIATOR STEEL COVERS	75-1100-100 SILVER	71	75	108	900	1100	100
	70-800-75 SILVER	66	70	102	650	800	75		75-1200-100 SILVER	71	75	112	1000	1200	100
	70-900-75 SILVER	66	70	104	750	900	75		75-1300-100 SILVER	71	75	112	1100	1300	100
	70-1100-75 SILVER	66	70	113	900	1100	75		75-1500-100 SILVER	71	75	120	1300	1500	100
46	70-700-100 SILVER	66	70	88	700	700	100	ROLLER SYSTEMS	75-1700-100 SILVER	71	75	126	1500	1700	100
	70-900-100 SILVER	66	70	98	900	900	100		75-1800-100	71	75	128	1600	1800	100
	70-1100-100 SILVER	66	70	102	900	1100	100		75-2000-100	71	75	133	1700	2000	100
	70-1300-100 SILVER	66	70	106	1100	1300	100		75-2200-100	71	75	136	1900	2200	100
64	70-1500-100 SILVER	66	70	115	1300	1500	100	DURASPRING SPIRAL SPRINGS	75-1500-120 SILVER	71	75	115	1260	1500	120
	70-1800-100 SILVER	66	70	124	1700	1800	100		75-1800-120	71	75	122	1560	1800	120
	70-1500-120 SILVER	66	70	110	1260	1500	120		75-2000-120 SILVER	71	75	127	1760	2000	120
	70-1800-120 SILVER	66	70	118	1560	1800	120		75-2200-120 SILVER	71	75	132	1900	2200	120
68	70-2000-120 SILVER	66	70	125	1760	2000	120	VIEWING SYSTEMS	75-2400-120	71	75	137	na	2400	120
	70-2200-120	66	70	129	1960	2200	120		75-2600-120	71	75	142	2200	2600	120
	70-2400-120	66	70	136	2200	2400	120		75-2800-120	71	75	147	na	2800	120
	70-2600-120	66	70	143	na	2600	120		75-2000-150	71	75	135	1700	2000	150
	70-3000-120	66	70	147	na	3000	120		75-2400-150	71	75	140	2100	2400	150
	70-2000-150	66	70	129	1700	2000	150		75-2600-150	71	75	144	2300	2600	150
	70-2400-150	66	70	135	2100	2400	150		75-2800-150 SILVER	71	75	145	2500	2800	150
	70-2800-150	66	70	139	na	2800	150		75-3000-150	71	75	152	na	3000	150
	70-3000-150	66	70	149	na	3000	150		75-2800-180	71	75	143	2440	2800	180
	70-2800-180	66	70	138	2440	2800	180		75-3000-180	71	75	148	na	3000	180

Standard sizes, other sizes on request. All dimension in mm.

DURASPRING SPIRAL SPRINGS

DURASPRING	SD*	ID	AD	Lh	Lv	BB
75-3250-180	71	75	156	2500	3250	180
75-3250-200	71	75	148	2850	3250	200
75-3500-200	71	75	158	na	3500	200
80-150-30 SILVER	76	80	98	90	150	30
80-250-30 SILVER	76	80	106	190	250	30
80-250-50 SILVER	76	80	96	150	250	50
80-450-50 SILVER	76	80	111	350	450	50
80-550-50 SILVER	76	80	114	450	550	50
80-450-60	76	80	102	330	450	60
80-550-60	76	80	105	430	550	60
80-650-60 SILVER	76	80	110	530	650	60
80-750-60	76	80	115	630	750	60
80-550-75 SILVER	76	80	99	400	550	75
80-600-75	76	80	102	450	600	75
80-650-75	76	80	105	500	650	75
80-750-75 SILVER	76	80	108	600	750	75
80-900-75	76	80	119	750	900	75
80-1000-75 SILVER	76	80	123	850	1000	75
80-1200-75 SILVER	76	80	128	1000	1200	75
80-900-100 SILVER	76	80	119	900	900	100
80-1100-100	76	80	115	900	1100	100
80-1300-100 SILVER	76	80	120	1100	1300	100
80-1500-100	76	80	126	1300	1500	100
80-1800-100	76	80	134	1600	1800	100
80-1300-120	76	80	115	1060	1300	120
80-1500-120	76	80	121	1260	1500	120
80-1800-120	76	80	128	1560	1800	120
80-2000-120 SILVER	76	80	133	1700	2000	120
80-2200-120	76	80	137	1700	2200	120
80-2400-120	76	80	142	na	2400	120
80-2800-120	76	80	145	na	2800	120
80-2000-150	76	80	139	1700	2000	150
80-2200-150	76	80	142	1900	2200	150
80-2400-150	76	80	146	2100	2400	150
80-2600-150	76	80	148	2300	2600	150
80-2800-150 SILVER	76	80	152	na	2800	150
80-3000-150	76	80	157	na	3000	150
80-2800-180	76	80	148	2440	2800	180
80-3000-180 SILVER	76	80	154	na	3000	180
80-3250-180	76	80	157	na	3250	180
80-3000-200	76	80	154	2600	3000	200

Standard sizes, other sizes on request. All dimension in mm.

DURASPRING	SD*	ID	AD	Lh	Lv	BB
80-3250-200 SILVER	76	80	160	na	3250	200
80-3500-200	76	80	163	2500	3500	200
85-150-30	81	85	103	90	150	30
85-250-30	81	85	111	190	250	30
85-250-50	81	85	105	150	250	50
85-350-50	81	85	109	250	350	50
85-450-50	81	85	116	350	450	50
85-550-50	81	85	119	450	550	50
85-650-60	81	85	115	530	650	60
85-550-75	81	85	108	400	550	75
85-900-75	81	85	125	750	900	75
85-1500-100	81	85	127	1300	1500	100
85-1500-120	81	85	126	1260	1500	120
85-2000-120	81	85	138	1700	2000	120
85-2400-150 SILVER	81	85	151	2100	2400	150
85-3500-200	81	85	168	na	3500	200
90-150-30 SILVER	86	90	110	90	150	30
90-250-30	86	90	116	190	250	30
90-150-50	86	90	112	50	150	50
90-250-50 SILVER	86	90	116	150	250	50
90-350-50 SILVER	86	90	121	250	350	50
90-450-50 SILVER	86	90	125	350	450	50
90-350-60 SILVER	86	90	112	230	350	60
90-450-60 SILVER	86	90	114	330	450	60
90-450-75	86	90	115	300	450	75
90-550-75 SILVER	86	90	119	400	550	75
90-650-75 SILVER	86	90	124	500	650	75
90-750-75	86	90	128	600	750	75
90-900-75	86	90	133	750	900	75
90-750-100	86	90	115	550	750	100

Legend

SD	Maximum outside diameter of the part to be covered *value is reduced by 6 mm when using flanges
ID	Inside diameter of spiral spring (±1 mm)
AD	Outside diameter of spiral spring (±2 mm)
Lh	Maximum extension length for horizontal installation position
Lv	Maximum extension length for vertical installation position
BB	Band width, corresponds to L _{min}
SILVER	sizes also in DURASPRING Silver available
na	not available

All dimensions in mm if not marked otherwise. Errors and omissions excepted.

SERVICE & QUALITY	02
STANDARD BELLOWS	08
SAUMRAI BELLOWS	18
SPECIAL BELLOWS	26
BACKWALL SYSTEMS	36
GLADIATOR STEEL COVERS	38
ROLLER SYSTEMS	46
DURASPRING SPIRAL SPRINGS	65
VIEWING SYSTEMS	68

DURASPRING SPIRAL SPRINGS

	DURASPRING	SD*	ID	AD	Lh	Lv	BB	
02	90-900-100 SILVER	86	90	120	700	900	100	SERVICE & QUALITY
	90-1100-100 SILVER	86	90	126	900	1100	100	
	90-1300-100 SILVER	86	90	132	1100	1300	100	
	90-1500-100 SILVER	86	90	144	1300	1500	100	
08	90-1300-120 SILVER	86	90	126	1060	1300	120	STANDARD BELLOWS
	90-1500-120 SILVER	86	90	131	1260	1500	120	
	90-1800-120	86	90	138	1600	1800	120	
	90-2000-120	86	90	148	na	2000	120	
18	90-1800-150	86	90	144	1500	1800	150	SAUMIRAI BELLOWS
	90-2000-150 SILVER	86	90	149	1700	2000	150	
	90-2300-150	86	90	154	na	2300	150	
	90-2600-150	86	90	159	na	2600	150	
26	90-2800-150	86	90	160	na	2800	150	SPECIAL BELLOWS
	90-3000-150	86	90	166	na	3000	150	
	90-2600-180	86	90	152	2240	2600	180	
	90-2800-180	86	90	158	na	2800	180	
34	90-3000-180	86	90	164	na	3000	180	BACKWALL SYSTEMS
	90-2600-200 SILVER	86	90	153	2400	2600	200	
	90-3000-200	86	90	162	2500	3000	200	
	90-3250-200	86	90	166	2500	3250	200	
38	90-3500-200	86	90	170	na	3500	200	GLADIATOR STEEL COVERS
	90-3700-200	86	90	173	2500	3700	200	
	90-4000-200	86	90	182	na	4000	200	
	90-4200-200 SILVER	86	90	185	na	4200	200	
46	90-4500-200	86	90	194	na	4500	200	ROLLER SYSTEMS
	100-250-60 SILVER	96	100	121	130	250	60	
	100-350-60 SILVER	96	100	126	230	350	60	
	100-350-75 SILVER	96	100	119	200	350	75	
66	100-450-75	96	100	124	300	450	75	DURASPRING SPIRAL SPRINGS
	100-600-75 SILVER	96	100	129	450	600	75	
	100-800-75 SILVER	96	100	138	650	800	75	
	100-800-100 SILVER	96	100	126	600	800	100	
68	100-1000-100 SILVER	96	100	132	800	1000	100	VIEWING SYSTEMS
	100-1200-100	96	100	137	1000	1200	100	
	100-1500-100	96	100	146	1300	1500	100	
	100-1100-120 SILVER	96	100	129	860	1100	120	
	100-1300-120 SILVER	96	100	136	1060	1300	120	
	100-1500-120	96	100	144	na	1500	120	
	100-1800-120 SILVER	96	100	148	na	1800	120	
	100-1500-150	96	100	147	1200	1500	150	
	100-1800-150	96	100	151	1500	1800	150	
	100-2000-150 SILVER	96	100	157	1700	2000	150	
	100-2500-150	96	100	164	na	2500	150	
	100-3000-150	96	100	188	na	3000	150	
100-2500-180	96	100	162	2140	2500	180		
100-2800-180	96	100	168	na	2800	180		
100-2800-200	96	100	165	na	2800	200		
100-3000-200	96	100	170	na	3000	200		
110-250-50 SILVER	106	110	130	na	250	50		
110-250-60 SILVER	106	110	130	130	250	60		
110-350-60 SILVER	106	110	135	230	350	60		
110-450-60 SILVER	106	110	139	330	450	60		
110-350-75 SILVER	106	110	130	200	350	75		
110-450-75	106	110	134	300	450	75		
110-600-75 SILVER	106	110	140	450	600	75		
110-800-75 SILVER	106	110	154	650	800	75		
110-650-100 SILVER	106	110	129	450	650	100		
110-750-100 SILVER	106	110	134	560	750	100		
110-900-100 SILVER	106	110	139	700	900	100		
110-1100-120	106	110	139	860	1100	120		
110-1300-120 SILVER	106	110	145	1060	1300	120		
110-1500-120 SILVER	106	110	155	1260	1500	120		
110-1500-150	106	110	155	1200	1500	150		
110-1800-150	106	110	157	1500	1800	150		
110-2000-150	106	110	160	1700	2000	150		
110-2200-180	106	110	165	1840	2200	180		
110-2400-180 SILVER	106	110	170	na	2400	180		
110-2400-200	106	110	162	2000	2400	200		
110-2800-200	106	110	172	2500	2800	200		
110-3000-200	106	110	176	na	3000	200		
110-3500-200	106	110	189	na	3500	200		
120-250-50	116	120	141	na	250	50		
120-350-50 SILVER	116	120	143	na	350	50		
120-250-60 SILVER	116	120	141	130	250	60		
120-350-60 SILVER	116	120	145	230	350	60		
120-450-60 SILVER	116	120	150	330	450	60		
120-350-75	116	120	140	200	350	75		
120-450-75 SILVER	116	120	145	300	450	75		
120-600-75	116	120	153	450	600	75		
120-650-100 SILVER	116	120	142	450	650	100		
120-750-100 SILVER	116	120	147	550	750	100		
120-900-100 SILVER	116	120	150	700	900	100		

Standard sizes, other sizes on request. All dimension in mm.

DURASPRING SPIRAL SPRINGS

DURASPRING	SD*	ID	AD	Lh	Lv	BB
120-900-120 SILVER	116	120	148	660	900	120
120-1100-120 SILVER	116	120	153	860	1100	120
120-1300-120	116	120	158	1100	1300	120
120-1500-120 SILVER	116	120	162	1300	1500	120
120-1300-150 SILVER	116	120	156	1000	1300	150
120-1500-150	116	120	163	1200	1500	150
120-1800-150	116	120	167	1500	1800	150
120-2000-150	116	120	177	1600	2000	150
120-1600-180	116	120	158	1240	1600	180
120-1800-180	116	120	161	1440	1800	180
120-2000-180 SILVER	116	120	169	1640	2000	180
120-2200-180	116	120	174	na	2200	180
120-2200-200 SILVER	116	120	165	1800	2200	200
120-2400-200	116	120	170	2100	2400	200
120-2600-200	116	120	174	na	2600	200
130-170-50	126	130	150	na	170	50
130-250-60 SILVER	126	130	145	210	250	60
130-350-60	126	130	155	na	350	60
130-450-60	126	130	156	410	450	60
130-250-75 SILVER	126	130	145	220	250	75
130-350-75	126	130	150	310	350	75
130-450-75	126	130	156	410	450	75
130-650-100	126	130	157	600	650	100
130-800-100	126	130	164	na	800	100
130-600-120	126	130	158	360	600	120
130-800-120 SILVER	126	130	161	560	800	120
130-1000-120 SILVER	126	130	164	760	1000	120
130-1100-120	126	130	163	na	1100	120
130-900-150	126	130	163	500	900	150
130-1300-150	126	130	170	1000	1300	150
130-1500-150	126	130	174	1200	1500	150
130-1800-150	126	130	185	na	1800	150
130-1650-180	126	130	170	1650	1650	180
130-2000-200	126	130	180	2000	2000	200
140-250-75	136	140	158	150	250	75
140-350-75	136	140	162	250	350	75
140-450-75	136	140	165	350	450	75
140-600-75	136	140	175	na	600	75
140-350-100	136	140	153	250	350	100
140-450-100	136	140	162	350	450	100
140-600-100	136	140	172	500	600	100

Standard sizes, other sizes on request. All dimension in mm.

DURASPRING	SD*	ID	AD	Lh	Lv	BB
140-700-120	136	140	170	460	700	120
140-1000-120	136	140	192	na	1000	120
140-1000-150	136	140	180	700	1000	150
140-1300-150	136	140	187	1000	1300	150
140-1500-150 SILVER	136	140	190	na	1500	150
140-1900-200	136	140	185	1500	1900	200
140-2000-200	136	140	193	1600	2000	200
140-2400-200	136	140	204	na	2400	200
150-350-60	146	150	172	300	350	60
150-450-75	146	150	188	na	450	75
150-500-75	146	150	190	na	500	75
150-600-75	146	150	194	na	600	75
150-750-150	146	150	180	na	750	150
150-1100-150	146	150	187	na	1100	150
150-1300-150	146	150	197	na	1300	150
160-250-60	156	160	178	na	250	60
160-250-75	156	160	180	na	250	75
160-450-75	156	160	189	na	450	75
160-450-100	156	160	182	350	450	100
160-650-120	156	160	191	550	650	120
160-750-120	156	160	193	600	750	120
160-800-150	156	160	197	na	800	150
160-950-150	156	160	200	na	950	150
160-1000-150	156	160	202	na	1000	150
160-1200-150 SILVER	156	160	204	na	1200	150
160-1200-200	156	160	193	na	1200	200
160-1300-200	156	160	200	na	1300	200
160-1400-200	156	160	212	na	1400	200
160-2000-200	156	160	222	na	2000	200

Legend

SD	Maximum outside diameter of the part to be covered *value is reduced by 6 mm when using flanges
ID	Inside diameter of spiral spring (±1 mm)
AD	Outside diameter of spiral spring (±2 mm)
Lh	Maximum extension length for horizontal installation position
Lv	Maximum extension length for vertical installation position
BB	Band width, corresponds to L _{min}
SILVER	sizes also in DURASPRING Silver available
na	not available

All dimensions in mm if not marked otherwise. Errors and omissions excepted.

SERVICE & QUALITY	02
STANDARD BELLOWES	08
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