STENFLEX

SF-10/1-E10

Steel compensator ▪ Type SF-10

Axial compensator DN 15 – DN 3400

DN 15 - DN 500

DN 600 - DN 3400

Structure type SF-10

☐ Vacuum-proof, short-length axial compensator, consisting of a stainless steel bellows and rotating flanges

Applications

- **for compensating axial movement**
- **for reducing tension, damping noise and oscillation in pipes and their system components, e.g.**
  - **pumps**
  - **motors**
  - **machines**
- **for installation in**
  - **industrial applications**
  - **gas and water supply**
  - **exhaust systems**
  - **heating installations**
  - **drinking water systems**
- **to compensate for installation inaccuracies**

Steel bellows PN 2,5 / PN 6 / PN 10 / PN 16

☐ Multiple convolution bellows in various stainless steel grades
☐ One ply or multi-ply structure
☐ DN 15 – DN 500 with flared ends
☐ DN 600 – DN 3400 with pre-welded flared ends

Material grade *	Material No. as per DIN EN	Temperature**	Possible uses
Stainless steel	**1.4541**	**-196 °C**	**Low temperature, acids, lyes, gases,**
		up to +550 °C	**fertilizers**
	1.4404, 1.4571	**+550 °C**	**Media containing chloride, oil, soap, drinking water, food stuff, petrol**
Heat-resistant steel	**1.4828**	**+900 °C**	**Hot gases, steam, air**
	1.4878	**+800 °C**	**Hot gases, steam, air**
Nickel-based alloy	**2.4858 (Incoloy 825)**	**+450 °C**	**Sulphuric acid, phosphoric acid, petrol, öl, gases**

* Check or inquire about the resistance of material grades to temperature and medium.
** Check or inquire about reduction in pressure by temperature.

Special designs

Other sizes (DN), lengths or pressure ratings on request.

Accessories

☐ Internal guide sleeve
☐ Protective tube
☐ Gas sealings for DVGW-application

Certificates

☐ CE (DGR 97/23/EG)
☐ American Bureau of Shipping
☐ Bureau Veritas
☐ DVGW (DN 32 - DN 200)
☐ Germanischer Lloyd
☐ Lloyd´s Register of Shipping
☐ RINA
☐ RMRS

Flanges

Version

☐ Rotating flanges
☐ Flange drilling for through bolts

Dimensions

Standard: DN 1200 - DN 3400 (PN 2,5)
DN 15 - DN 2000 (PN 6)
DN 15 - DN 1000 (PN 10)
DN 15 - DN 500 (PN 16)
according to EN 1092
Others: DIN EN, ANSI, BS etc.
Connection dimensions see technical annex

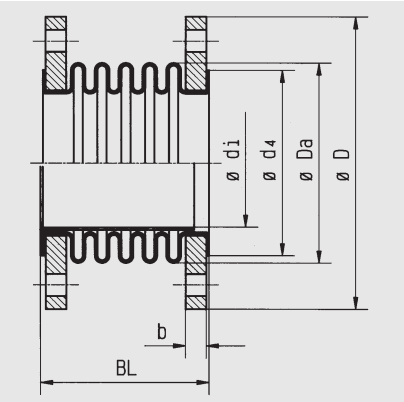
Materials

Standard: 1.0038 (S235JR), 1.4541, 1.4404
Others: stainless steel, etc.

Corrosion protection

Standard: DN 32 - DN 250 electro-galvanized,
DN 300 - DN 3400 anti-corrosion primed
Others: hot-dip galvanized, special varnish, special coating etc.

Version



Type SF-10

Note

Please comply with the general technical instructions regarding reaction force, moving force, fixed point load, installation instructions, etc.

Subject to technical alterations and deviations resulting from the manufacturing process.

Pressure rate PN 2,5 standard program

DN	BL mm	Δ ax_{tot} Axial move-ment mm	C_{ax} Axial spring rate N/mm	Δ lat_{tot} Lateral move-ment mm	C_{lat} Lateral spring rate N/mm	A* Effective bellows cross sectional area cm^2	ø d_4 Flared end ø mm	ø D_a Bellows outer ø mm	PN Flange connec-tion EN 1092	ø D Flange outer ø mm	b Flange thick-ness mm	Weight approx. kg
15	100	20	30	11	15	7	48	36	10	95	14	1.2
20	100	20	30	11	15	7	58	36	10	105	16	2.2
25	105	25	28	13	10	10	68	42	10	115	16	3.2
32	135	32	15	18	8	15	55	52	6	120	16	2.6
40	135	36	17	20	15	22	68	61	6	130	16	3.1
50	160	44	16	24	24	34	80	76	6	140	16	3.6
65	175	56	26	24	23	55	95	96	6	160	18	5.2
80	190	60	21	23	24	79	110	114	6	190	18	7.1
100	195	70	25	23	39	116	140	137	6	210	18	8.0
125	200	72	26	21	49	175	169	168	6	240	20	11.0
150	220	80	28	21	62	247	200	192	6	265	20	13.0
200	230	86	36	19	118	425	255	251	6	320	22	18.0
250	245	96	50	19	208	623	312	301	6	375	20	23.0
300	180	41	185	–	–	992	364	386	6	440	24	27.0
	265	84	92	13	731							29.0
350	185	40	201	–	–	1179	398	418	6	490	26	37.0
	270	81	100	12	931							39.0
400	190	39	226	–	–	1509	452	469	6	540	28	43.0
	275	79	113	10	1321							46.0
450	205	38	251	–	–	1881	498	520	6	595	30	53.0
	290	77	126	9	1804							56.0
500	205	38	276	–	–	2284	548	570	6	645	30	57.0
	290	76	138	8	2383							61.0
600	205	37	328	–	–	3230	653	672	6	755	32	74.0
	290	75	164	7	3936							79.0
700	205	37	380	–	–	4338	756	774	6	860		
	290	74	190									
800	205	42	431	–	–	5597	857	875	6	975		
	290	84	215									
900	205	42	482	–	–	7016	958	976	6	1075		
	290	84	241									
1000	205	41	533	–	–	8612	1060	1078	6	1175		
	290	83	266									
1200	205	41	636			12294	1263	1282	2.5	1375		
	290	82	318	–	–							
1400	205	41	739			16584	1465	1484	2,5	1575		
	290	82	370	–	–							
1600	225	41	843			21541	1689	1686	2,5	1790		
	310	82	422	–	–						on request	on request
1800	225	41	946			27145	1892	1889	2,5	1990		
	310	82	473	–	–							
2000	225	41	1043			33429	2095	2094	2,5	2190		
	310	82	522	–	–							
2200	225	41	1153			40331	2298	2297	2,5	2405		
	310	82	576	–	–							
2400	245	40	1256			47880	2501	2500	2,5	2605		
	330	81	628	–	–							
2600	305	44	1956			55220	2704	2683	2,5	2805		
	400	88	978	–	–							
2800	305	44	2103			63864	2904	2883	2,5	3030		
	400	88	1051	–	–							
3000	305	44	2249			73136	3104	3083	2,5	3230		
	400	88	1125	–	–							
3200	305	44	2396			83037	3304	3283	2,5	3430		
	400	88	1198	–	–							
3400	305	44	2542			93566	3504	3483	2,5	3630		
	400	88	1271	–	–							

Table values refer to +20 °C, bellows material 1.4541, 1000 cycles. Please inquire for deviating values.
For pure axial movement: inner diameter of internal guide sleeve mentioned in tables PN 6, PN 10, PN 16.
If Δ ax and Δ lat occur simultaneously, the table values must be reduced accordingly. The sum of all shares must not exceed 100 %.
*Effective bellows cross sectional area is a theoretical value.

Steel compensator ▪ Type SF-10

Axial compensator

Pressure rate PN 6 standard program

DN	BL mm	Δ ax_{tot} Axial spring rate mm	C_{ax} Axial move-ment N/mm	A* Effective bellows cross sectional area cm^2	ø d_4 Flared end ø mm	ø D_a Bellows outer ø mm	ø d_i Internal guide sleeve ø mm	PN Flange connec-tion EN 1092	ø D Flange outer ø mm	b Flange thickness mm	Weight approx. kg
15	108	17	40	7	45	38	18	10	95	14	1.5
20	108	17	40	7	58	38	18	10	105	16	2.2
25	125	26	49	16	54	54	25	10	115	16	2.4
32	135	26	49	16	54	54	32	6	120	16	2.6
40	135	30	111	25	68	66	38	6	130	16	3.1
50	155	36	177	37	75	79	49	6	140	16	3.6
65	165	40	199	54	95	96	63	6	160	18	5.2
80	175	46	148	78	110	115	76	6	190	18	7.1
100	180	46	175	115	140	137	96	6	210	18	8.0
125	200	50	79	173	165	168	123	6	240	20	11.0
150	230	50	160	243	200	196	148	6	265	20	13.0
200	230	70	219	422	254	253	198	6	320	22	18.0
250	245	52	624	620	310	302	249	6	375	20	23.0
300	180 265	41 84	700 350	996	364	387	310	6 6	440	24	28.0 32.0
350	185 270	40 81	762 381	1183	398	419	342	6 6	490	26	39.0 43.0
400	190 275	39 79	864 432	1513	452	470	393	6 6	540	28	45.0 50.0
450	205 290	38 77	967 484	1885	498	521	444	6 6	595	30	56.0 61.0
500	205 290	38 76	1069 534	2289	548	571	494	6 6	645	30	60.0 66.0
600	205 290	37 75	1274 637	3236	653	673	592	6 6	755	32	78.0 85.0
700	205 290	37 74	1479 739	4345	777	775	696	6 6	860		
800	220 315	27 54	1681 840	5605	878	876	795	6 6	975		
900	220 315	26 53	1885 942	7025	979	977	895	6 6	1075		
1000	240 335	26 53	2092 1046	8622	1081	1079	995	6 6	1175	on request	on request
1200	240 335	26 53	2505 1253	12306	1285	1283	1195	6 6	1405		
1400	300 395	26 53	2914 1457	16598	1507	1485	1395	6 6	1630		
1600	300 395	26 53	3326 1663	21583	1711	1689	1595	6 6	1830		
1800	300 395	25 50	3735 1868	27192	1914	1892	1795	6 6	2045		
2000	310 410	22 44	7890 3945	33461	2117	2096	1995	6 6	2265		

Table values refer to +20 °C, bellows material 1.4541, 1000 cycles. Please inquire for deviating values.
*Effective bellows cross sectional area is a theoretical value.

Pressure rate PN 10 standard program

DN	BL mm	Δ ax_{tot} Axial movement mm	C_{ax} Axial spring rate N/mm	A* Effective bellows cross sectional area cm^2	ø d_4 Flared end ø mm	ø D_a Bellows outer ø mm	ø d_i Internal guide sleeve ø mm	PN Flange connection EN 1092	ø D Flange outer ø mm	b Flange thickness mm	Weight approx. kg
15	108	17	40	7	45	38	18	10	95	14	1.5
20	108	17	40	7	58	38	18	10	105	16	2.2
25	125	26	49	16	54	54	25	10	115	16	2.4
32	135	26	49	16	54	54	32	10	140	16	4.5
40	135	30	111	25	68	66	38	10	150	16	5.0
50	155	36	177	37	75	79	49	10	165	18	6.8
65	165	40	199	54	95	96	63	10	185	18	7.2
80	175	46	148	78	110	115	76	10	200	20	8.2
100	180	46	175	115	140	137	96	10	220	20	11.3
125	200	50	79	173	165	168	123	10	250	22	12.8
150	230	50	160	243	200	196	148	10	285	22	17.8
200	230	70	219	422	254	253	198	10	340	24	22.0
250	245	52	624	620	310	302	249	10	395	26	27.4
300	190	19	700	996	364	387	310	10	445	26	32.0
	285	39	350					10			36.0
350	195	19	762	1183	398	419	342	10	505	28	46.0
	290	38	381					10			50.0
400	205	19	864	1513	452	470	393	10	565	32	61.0
	295	38	432					10			65.0
450	215	19	967	1885	498	521	444	10	615	36	73.0
	310	38	484					10			79.0
500	215	19	1069	2289	548	571	494	10	670	38	87.0
	310	38	534					10			93.0
600	210	18	1274	3236	653	673	592	10	780	42	116.0
	310	37	637					10			123.0
700	220	19	1479	4345	777	775	696	10	895		
	310	38	739					10			
800	240	25	1681	5605	878	876	795	10	1015	on request	on request
	335	50	840					10			
900	240	25	1885	7025	979	977	895	10	1115		
	335	50	942					10			
1000	260	24	2092	8622	1081	1079	995	10	1230		
	355	49	1046					10			

Pressure rate PN 16 standard program

DN	BL mm	Δ ax_{tot} Axial movement mm	C_{ax} Axial spring rate N/mm	A* Effective bellows cross sectional area cm^2	ø d_4 Flared end ø mm	ø D_a Bellows outer ø mm	ø d_i Internal guide sleeve ø mm	PN Flange connection EN 1092	ø D Flange outer ø mm	b Flange thickness mm	Weight approx. kg
15	108	17	40	7	45	38	18	16	95	14	1.5
20	108	17	40	7	58	38	18	16	105	16	2.2
25	125	26	49	16	54	54	25	16	115	16	2.4
32	135	26	49	16	54	54	32	16	140	16	4.5
40	135	30	111	25	68	66	38	16	150	16	5.0
50	155	36	177	37	75	79	49	16	165	18	5.8
65	165	40	199	54	95	96	63	16	185	18	7.2
80	175	46	148	78	110	115	76	16	200	20	8.2
100	180	46	175	115	140	137	96	16	220	20	11.3
125	200	50	79	173	165	168	123	16	250	22	12.8
150	230	50	160	243	200	196	148	16	285	22	17.8
200	230	70	219	422	254	253	198	16	340	26	24.0
250	245	52	624	620	310	302	249	16	405	29	35.0
300	225	22	1319	998	364	388	310	16	460	32	44.0
	325	44	659					16			49.0
350	230	22	1438	1185	398	420	342	16	520	35	63.0
	330	44	719					16			68.0
400	240	21	1636	1516	452	471	393	16	580	38	79.0
	340	43	818					16			86.0
450	250	21	1833	1888	498	522	444	16	640	42	101.0
	350	43	916					16			108.0
500	260	21	2025	2293	548	572	494	16	715	46	142.0
	360	42	1013					16			150.0

Table values refer to +20 °C, bellows material 1.4541, 1000 cycles. Please inquire for deviating values.
*Effective bellows cross sectional area is a theoretical value.