

STEEL EXPANSION JOINT TYPE SF-11

AXIAL EXPANSION JOINT DN 15 – DN 500



STRUCTURE TYPE SF-11, STEEL BELLOWS PN 16

- Vacuum-proof axial expansion joint consisting of a stainless steel bellows and welded flanges
- Multiple convolution bellows in various stainless steel grades
- Single ply or multi-ply structure

Material grade*	Material No. as per DIN EN	Temperature**	Possible uses
Stainless steel	1.4541	-196 °C up to +550 °C	Low temperature, acids, lyes, gases, fertilizers
	1.4404 1.4571	+550 °C	Media containing chloride, oil, soap, drinking water, food stuff, petrol

* Check or inquire about the resistance of material grades to temperature and medium.

** Check or inquire about reduction in pressure by temperature.

FLANGES / VERSIONS

- Welded flanges with turned seal
- Flange drilling for through bolts

	Standard	Others
Dimensions	EN 1092	ANSI, BS etc. Connection dimensions see technical annex page 213 – 215
Materials	1.0038 (S235JR), 1.0460 (P250GH)	stainless steel etc.
Corrosion protection	anti-corrosion primed	special varnish etc.

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.

APPLICATIONS

- for compensating axial movement
- for reducing tension, in pipes and their system components, e.g.
 - pumps
 - compressors
 - engines
 - turbines
 - machines
 - process plants
- for installation in
 - industrial applications
 - gas and water supply
 - exhaust systems
 - heating installations
- to compensate for installation inaccuracies

GUIDE SLEEVE

Materials

Standard: 1.4541

SPECIAL DESIGN

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

CERTIFICATES

- CE (PED 2014/68/EU)
- American Bureau of Shipping
- Bureau Veritas
- DVGW (DN 32 – DN 200)
- DNV GL® / DNV®
- RMRS
- Rina

ACCESSORIES

- internal guide sleeve
- Protective tube
- Gas sealings for DVGW-application

PRESSURE RATE STANDARD PROGRAM PN 16

DN	BL	$\Delta a_{x\text{tot}}^{**}$ Axial movement mm	C_{ax} Axial spring rate N/mm	A* Effective bellows cross sectional area cm ²	$\varnothing D_a$ Bellows outer \varnothing mm	$\varnothing d_i$ Internal guide sleeve \varnothing mm	PN Flange connection EN1092	$\varnothing D$ Flange outer \varnothing mm	b Flange thick- ness mm	Weight approx. kg
15	100	20	30	7	36	14	16	95	14	1.5
20	100	20	30	7	36	18	16	105	16	2.0
25	105	25	28	10	42	24	16	115	16	2.4
32	150	20	49	16	54	32	16	140	18	3.9
40	175	26	132	25	66	38	16	150	18	4.3
50	205	32	197	36	79	49	16	165	18	5.3
65	210	36	221	54	96	64	16	185	20	6.4
80	225	38	188	78	115	77	16	200	20	8.2
100	235	42	175	115	137	96	16	220	20	9.7
125	265	50	79	173	168	123	16	250	22	14.0
150	290	50	156	243	197	150	16	285	22	17.2
200	310	38	237	422	253	199	16	340	24	24.9
250	335	38	624	620	302	250	16	405	26	36.0
300	260	22	863	995	388	299	16	460	28	50.0
300	410	52	379	990	386	299	16	460	28	57.0
350	265	21	946	1182	420	329	16	520	30	72.0
350	415	54	379	1182	420	329	16	520	30	79.0
400	270	21	1078	1514	471	380	16	580	32	90.0
400	420	54	431	1514	471	380	16	580	32	98.0
450	270	21	1210	1886	522	431	16	640	34	105.0
450	420	53	484	1886	522	431	16	640	34	115.0
500	270	21	1338	2290	572	482	16	715	36	136.0
500	420	53	535	2290	572	482	16	715	36	147.0

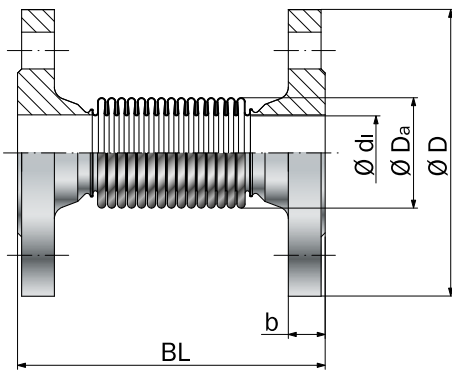
For larger sizes (DN) please see type SF-16. Also available with PN 10 flange connection.

Table values refer to +20 °C, bellows material 1.4541, 1000 cycles.

Max. allowable pressure pulsation of 1.6 bar (brief periods). Please inquire for deviating values.

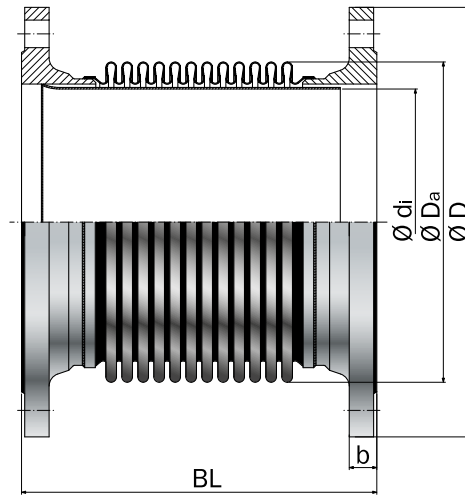
*Effective bellows cross sectional area is a theoretical value.

**This value represents the total possible movement. Example: $\Delta a_{x\text{tot}} = 28\text{mm}$. This means that the expansion joint has a total movement value of 28 mm (= +/- 14 mm).



DN 15 – DN 32

Type SF-11 without inner guide sleeve



DN 40 – DN 500

Type SF-11 with inner guide sleeve