

Steel expansion joint - Type SF-20

Lateral expansion joint DN 32 – DN 500



Structure type SF-20

- Vacuum-proof, short-length lateral expansion joint, consisting of a stainless steel bellows and rotatable flanges
- Rotable flanges with tie rods to absorb reaction force

Steel bellows PN 10 / PN 16

- Multiple convolution bellows in various stainless steel grades
- One 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
Heat-resistant steel	1.4828	+900 °C	Hot gases, steam, air
	1.4878	+800 °C	Hot gases, steam, air

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

Flanges

Version

- Rotable flanges
- Flange drilling for through bolts

Dimensions

Standard: DN 32 - DN 500 (PN 10)
 DN 32 - 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

Others: stainless steel

Corrosion protection

Standard: DN 32 - DN 250
 electrogalvanized,
 DN 300 - DN 500
 anti-corrosion primed

Others: hot-dip galvanized, special varnish, special coating, 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 lateral movement
- for reducing tension, 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

Tie rod restraints

- External restraints carried on spherical washers/conical seats

Materials

Standard: tie rods 8.8

Others: stainless steel

Corrosion protection

Standard: electrogalvanized

Others: hot-dip galvanized

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

Pressure rate **PN 10** **standard program**

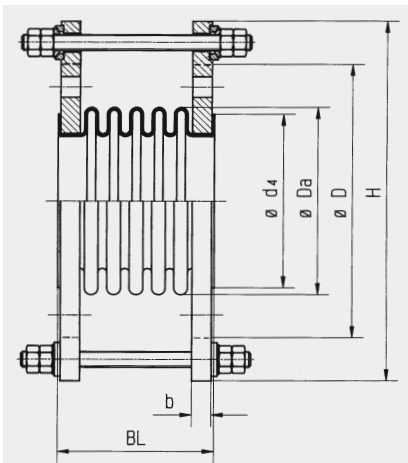
DN	BL	Δlat_{tot} Lateral movement	C_{lat} Lateral spring rate	F_{fric} Friction force restraints	$\varnothing d4$ Flared end \varnothing	$\varnothing D_a$ Bellows outer \varnothing	PN Flange connection EN 1092	$\varnothing D$ Flange outer \varnothing	H Flange height	b Flange thickness	Weight approx. kg
	mm	mm	N/mm	N/bar	mm	mm		mm	mm	mm	
32	135	14	28	4	54	54	16	140	226	16	5.0
40	135	16	74	6	68	66	16	150	236	16	5.5
50	155	16	114	8	75	79	16	165	251	18	7.1
65	165	18	177	11	95	96	16	185	271	18	8.6
80	175	18	174	15	110	115	16	200	286	20	10.2
100	180	16	266	21	140	137	16	220	306	20	11.5
125	200	14	156	37	165	168	16	250	353	22	16.3
150	230	14	313	46	200	197	16	285	388	22	19.3
200	230	9	715	93	254	253	10	340	457	24	27.0
250	245	8	2571	130	310	302	10	395	512	26	33.9
300	295	10	1152	175	364	387	10	445	570	26	48.0
350	305	9	1493	202	396	419	10	505	630	30	65.0
400	310	8	2171	255	452	470	10	565	690	32	78.0
450	315	7	3034	440	498	521	10	615	793	36	108.0
500	320	6	4074	528	548	571	10	670	848	38	123.0

Pressure rate **PN 16** **standard program**

DN	BL	Δlat_{tot} Lateral movement	C_{lat} Lateral spring rate	F_{fric} Friction force restraints	$\varnothing d4$ Flared end \varnothing	$\varnothing D_a$ Bellows outer \varnothing	PN Flange connection EN 1092	$\varnothing D$ Flange outer \varnothing	H Flange height	b Flange thickness	Weight approx. kg
	mm	mm	N/mm	N/bar	mm	mm		mm	mm	mm	
32	135	14	28	4	54	54	16	140	226	16	5.0
40	135	16	74	6	68	66	16	150	236	16	5.5
50	155	16	114	8	75	78	16	165	251	18	7.1
65	165	18	177	11	95	96	16	185	271	18	8.6
80	175	18	174	15	110	115	16	200	286	20	10.2
100	180	16	266	21	140	137	16	220	306	20	11.5
125	200	14	156	37	165	168	16	250	353	22	16.3
150	230	14	313	46	200	197	16	285	388	22	19.3
200	230	9	715	93	254	253	16	340	457	26	28.1
250	245	8	2571	130	310	302	16	405	570	29	47.0
300	320	8	2051	163	364	388	16	460	584	32	63.0
350	325	7	2671	191	396	420	16	520	644	35	82.0
400	330	6	3896	242	452	471	16	580	704	38	105.0
450	340	5	5446	415	498	522	16	640	820	42	144.0
500	345	5	7317	499	548	572	16	715	893	46	193.0

Table values refer to +20 °C, bellows material 1.4541, 1000 cycles. Max. allowable pressure pulsation of 1.0 bar (brief periods). Please inquire for deviating values.

Version



Type SF-20
External restraints, carried on spherical washers/conical seats (ball joint)