

Balance Series

Pipeline systems are exposed to temperature variations, settling in foundations, forces, and deformations causing movement and/or stress in the system. To ensure flawless operation of the system it is necessary to insert flexible parts to absorb the movements preventing structural damage.

To provide excellent vibration isolation and flexibility to the pipeline system Trelleborg offers top of the line stainless steel expansion joints, the Balance series. With the Balance series, Trelleborg offers a complete program of expansion joints for various applications. The expansion joints are available with one or more approvals by certification societies as ABS, Bureau Veritas, and German Lloyds. For each situation we can offer you solutions (without affecting the pipeline system) with Trelleborg qualified expansion joints that can:

- Compensate movement and expansion
- Absorb stress in the system
- Reduce noise transmissions and vibration
- Compensate ground and foundation settling
- Compensate inaccurate assembly
- Serve as dismantling joints on fittings

Our complete portfolio consists of standard expansion joints as well as our special customized expansion joints. Balance series expansion joints are used worldwide for various applications like exhaust gas lines, low and high pressure pipelines.



ADVANTAGES

- Suitable for high temperatures
- Various variations available (dimensions, medium, pressure)
- Also available for vacuum
- Flanges according to DIN or ASA (fixed or rotating)
- Customization possible (to meet customer demands)
- Stock item up to DN1200
- Type approval by classification societies

APPLICATION EXAMPLES

- Exhaust gas pipeline systems
- High-pressure pipelines (steam, liquids)
- Large heating pipeline systems



Balance I: DN25-400

BALANCE I: DN25-400

The Balance I is a stainless steel expansion joint with carbon steel weld ends. It is used to accommodate axial movements and relatively small lateral misalignments in piping systems. Due to its double-ply bellows, this compensator is more flexible in comparison to similar single-ply compensators.

APPROVALS

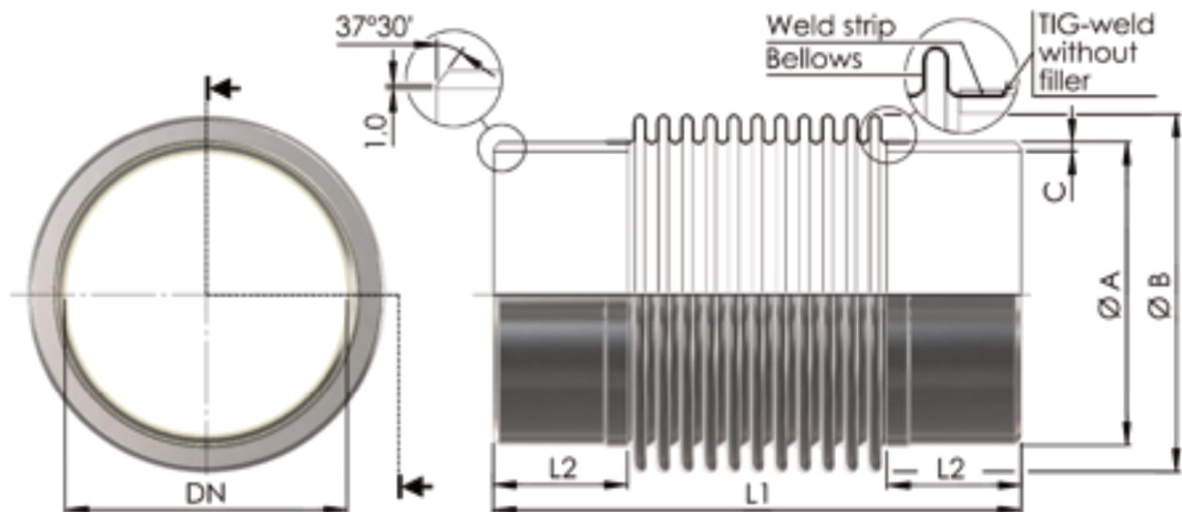
Type approval available on request.

CHARACTERISTICS

- Stainless steel expansion joint AISI 321
- Double-ply bellows material
- Standard length
- Carbon steel weld ends
- Max. temperature: 550 °C
- Max. pressure: 2,5 bar (50 °C)
- Stock item



TECHNICAL DRAWING



Balance I: DN25-400

PRODUCT DATA¹

PART NO.	DN	L1	BELLOWS (MATERIAL: AISI 321)			WELDING ENDS (MATERIAL: CARBON STEEL)			MOVEMENTS ² (MM)		SPRINGRATE (N/MM)	
			B (mm)	Plies	Thickness (mm)	A (mm)	C (mm)	L2 (mm)	Axial +/-	Lateral +/-	Axial +/-	Lateral +/-
330 000 025	25	205	42,0	1	0,2	33,7	2,9	45	28	15	18	57
330 000 032	32	205	52,0	1	0,3	42,4	2,6	50	28	15	50	186
330 000 040	40	205	60,3	1	0,3	48,3	2,6	50	28	15	36	143
330 000 050	50	245	78,3	2	0,3	60,3	2,9	63	28	15	49	214
330 000 065	65	245	96,7	2	0,3	76,1	2,9	63	28	14	40	206
330 000 080	80	245	109,7	2	0,3	88,9	3,2	63	28	13	46	261
330 000 090	90	245	122,2	2	0,3	101,6	3,2	63	35	10	46	337
330 000 100	100	245	140,5	2	0,3	114,3	3,6	63	35	10	35	281
330 000 125	125	245	165,7	2	0,3	139,7	3,6	63	35	9	42	389
330 000 150	150	245	200,5	2	0,3	168,3	4,0	63	35	9	35	365
330 000 175	175	245	225,9	2	0,3	193,7	4,5	63	35	9	35	365
330 000 200	200	245	251,1	2	0,3	219,1	4,5	63	35	6	43	610
330 000 250	250	245	305,2	2	0,3	273,0	5,0	63	35	5	54	924
330 000 300	300	295	360,9	2	0,3	323,9	5,6	75	40	6	42	698
330 000 350	350	295	392,6	2	0,3	355,6	5,6	75	40	5	48	870
330 000 400	400	295	443,4	2	0,3	406,4	5,6	75	40	3	52	1157

Note:

1. Other stainless steel grades and diameters available on request
2. Axial and lateral movements are not to be used in combination



BALANCE I WITH INNER SLEEVE: DN450-1000

BALANCE I WITH INNER SLEEVE: DN450-1000

The Balance I with inner sleeve is a stainless steel expansion joint with carbon steel weld ends and a stainless steel inner sleeve. It is used to accommodate axial movements and relatively small lateral misalignments in piping systems with large diameters.

Due to its double-ply bellows, this compensator is more flexible in comparison to similar single-ply compensators. The maximum operating temperature of the Balance I with inner sleeve is +550 °C, the maximum working pressure 2,5 bar (50 °C).

APPROVALS

Type approval available on request.

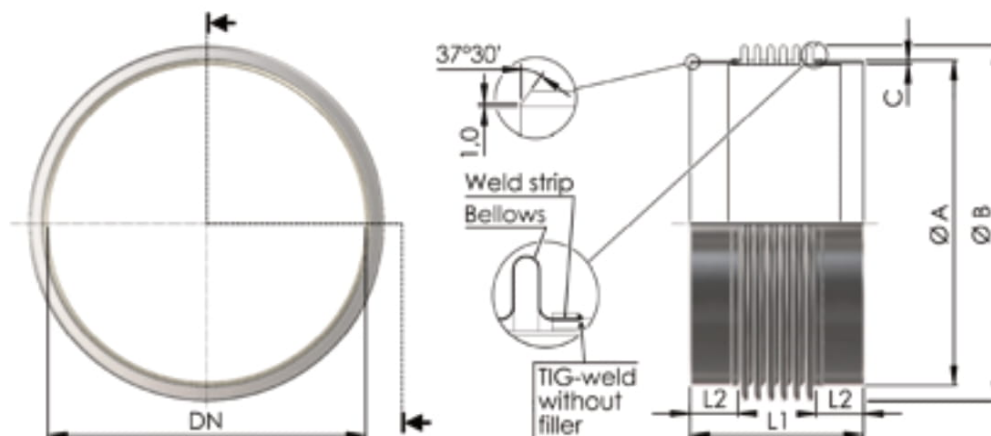
CHARACTERISTICS

- Stainless steel expansion joint AISI 321
- Double-ply bellows material
- Standard length
- Stainless steel inner sleeve
- Carbon steel weld ends
- Max. temperature: 550 °C
- Max. pressure: 2,5 bar (50 °C)
- Stock item



Figures stated are for natural rubber hardness 60° IRH. Other hardness grades are available upon request. The technical values are to be used for info only. If you have any questions, please contact TAVS. Other dimensions on special demand with minimum quantity and/or order value.

TECHNICAL DRAWING



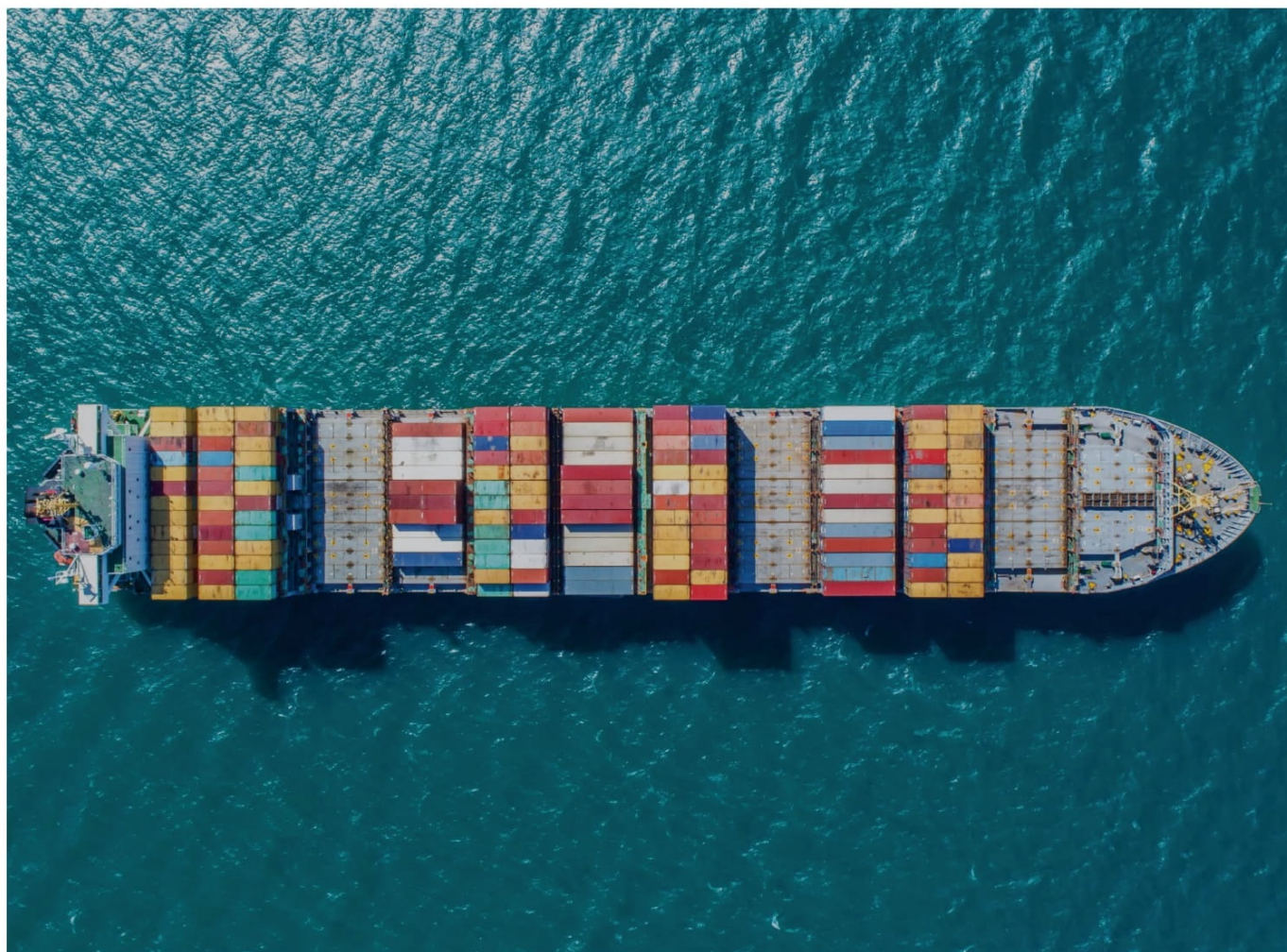
BALANCE I WITH INNER SLEEVE: DN450-1000

PRODUCT DATA¹

PART NO.	DN	L1	BELLOWS (MATERIAL: AISI 321)			WELDING ENDS (MATERIAL: CARBON STEEL)			MOVEMENTS ² (MM)		SPRINGRATE (N/MM)	
			B (mm)	Plies	Thickness (mm)	A (mm)	C (mm)	L2 (mm)	Axial +/-	Lateral +/-	Axial +/-	Lateral +/-
330 010 450	450	300	509,2	2	0,4	457,2	8	65	40	3	26	575
330 010 500	500	340	564	2	0,4	508	8	65	48	3	21	437
330 010 600	600	340	669,6	2	0,4	609,6	8	65	48	3	20	452
330 010 700	700	380	779	2	0,4	711	8	105	36	3	25	739
330 010 800	800	380	889	2	0,4	813	8	105	36	3	21	629
330 010 900	900	380	998	2	0,4	914	8	105	36	3	22	737
330 011 000	1000	380	1108	2	0,5	1016	8	105	36	3	19	628

Note:

1. Other stainless steel grades and diameters available on request
2. Axial and lateral movements are not to be used in combination



BALANCE II TWIN: DN40-300

BALANCE II TWIN: DN40-300

The Balance II is a stainless steel expansion joint with carbon steel weld ends. It is used to accommodate axial movements and relatively large lateral misalignments in piping systems. Due to its double-ply bellows, this compensator is more flexible in comparison to similar single-ply compensators. The maximum operating temperature of the Balance II is +550 °C, the maximum working pressure 2,5 bar (50 °C).

APPROVALS

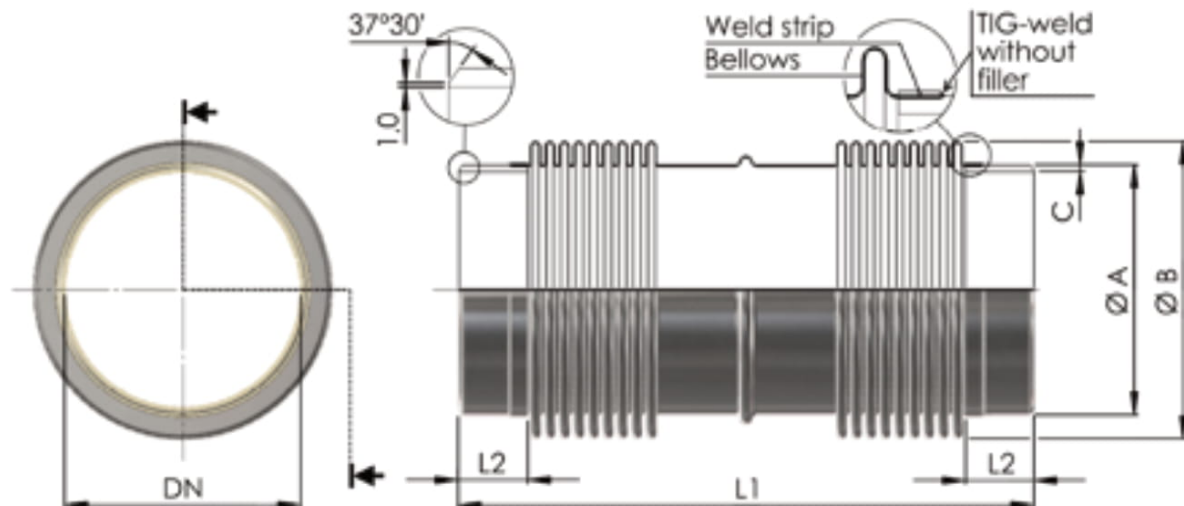
Type approval available on request.

CHARACTERISTICS

- Stainless steel expansion joint AISI 321
- Twin bellows construction
- Double-ply bellows material
- Standard length
- Carbon steel weld ends
- Max. temperature: 550 °C
- Max. pressure: 2,5 bar (50 °C)
- Stock item



TECHNICAL DRAWING



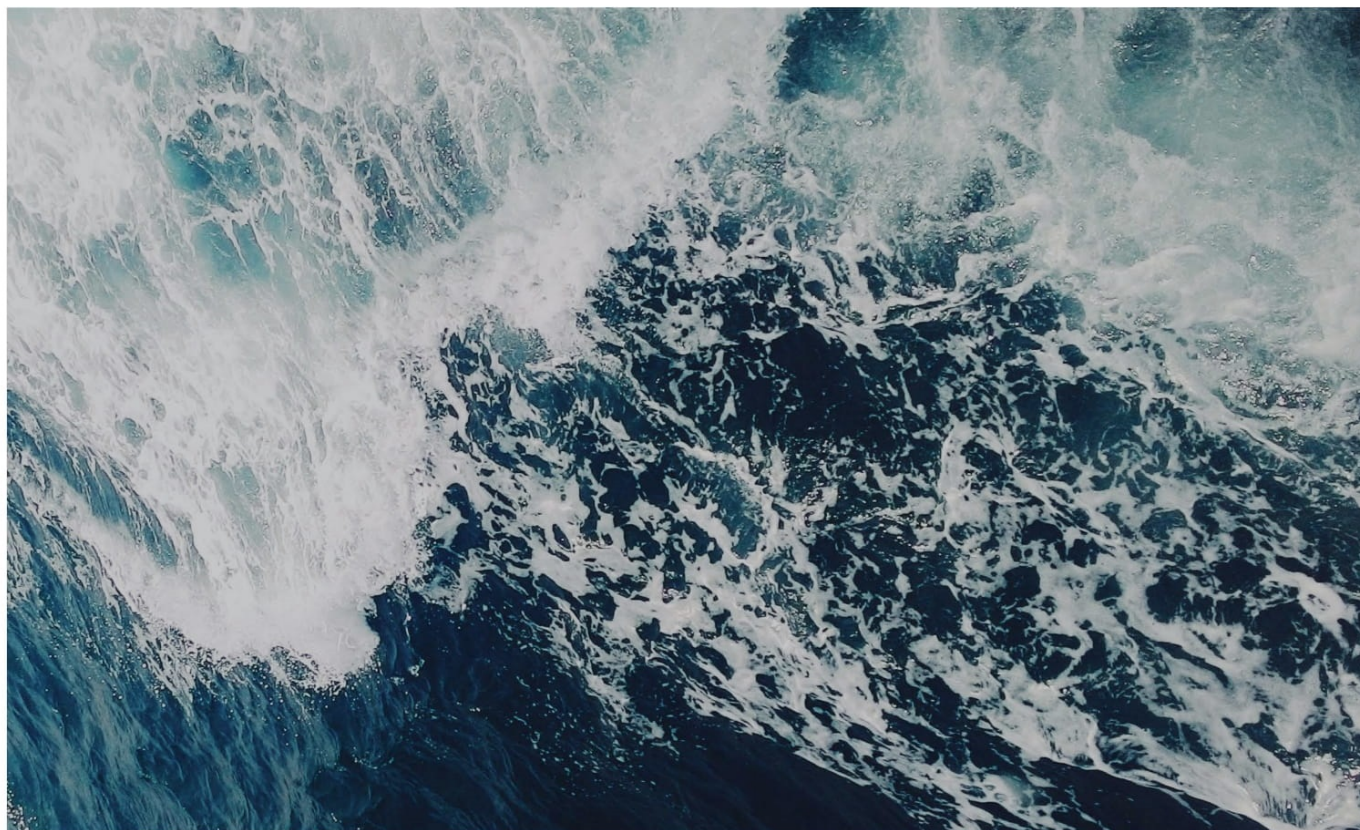
BALANCE II TWIN: DN40-300

PRODUCT DATA¹

PART NO.	DN	L1	BELLOWS (MATERIAL: AISI 321)			WELDING ENDS (MATERIAL: CARBON STEEL)			MOVEMENTS ² (MM)		SPRINGRATE (N/MM)	
			B (mm)	Plies	Thickness (mm)	A (mm)	C (mm)	L2 (mm)	Axial +/-	Lateral +/-	Axial +/-	Lateral +/-
330 020 040	40	375	60,3	1	0,3	48,3	2,6	40	30	73	21	8
330 020 050	50	375	77,0	2	0,3	60,3	2,9	40	32	65	23	11
330 020 065	65	345	95,0	2	0,3	76,1	2,9	40	54	54	32	19
330 020 080	80	380	111,0	2	0,3	88,9	3,2	40	38	63	20	13
330 020 100	100	330	140,0	2	0,3	114,3	3,6	40	36	46	25	23
330 020 125	125	320	168,0	2	0,3	139,7	3,6	40	32	33	23	28
330 020 150	150	395	200,5	2	0,4	168,3	4,0	50	45	46	38	24
330 020 175	175	395	227,8	2	0,4	193,7	4,5	50	44	40	36	23
330 020 200	200	405	255,1	2	0,4	219,1	4,5	50	49	42	43	27
330 020 250	250	405	315,0	2	0,4	273,0	5,0	50	47	33	39	37
330 020 300	300	415	371,9	2	0,4	323,9	5,0	70	45	18	37	64

Note:

1. Other stainless steel grades and diameters available on request
2. Axial and lateral movements are not to be used in combination



Balance III: DN100-350

BALANCE III: DN100-350

The Balance III is a stainless steel expansion joint with carbon steel weld ends. It is used to accommodate axial movements and relatively large lateral misalignments in piping systems. Due to its double-ply bellows, this compensator is more flexible in comparison to similar single-ply compensators. The maximum operating temperature of the Balance III is +550 °C, the maximum working pressure 2,5 bar (50 °C).

APPROVALS

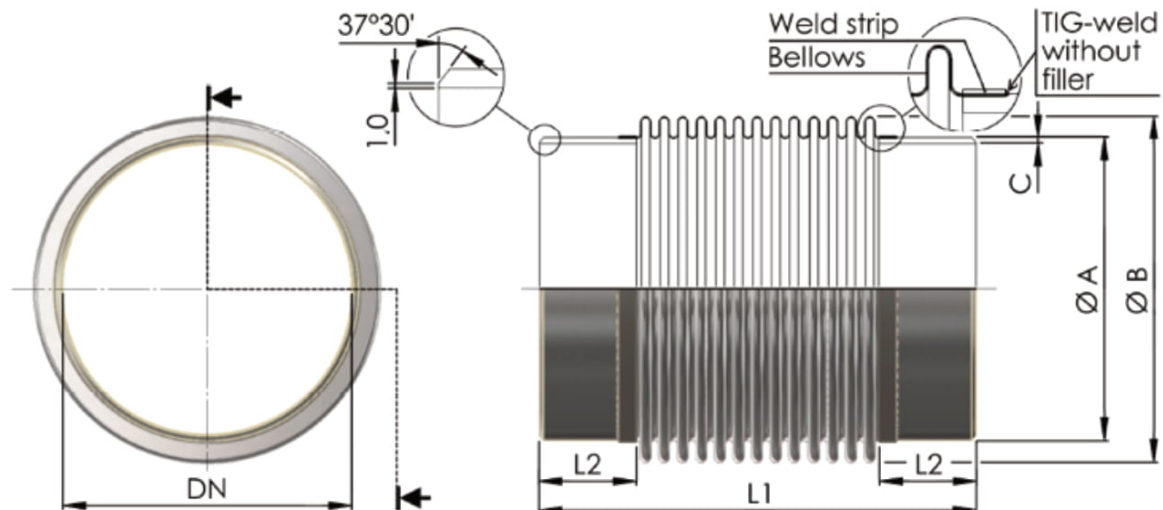
Type approval available on request.

CHARACTERISTICS

- Stainless steel expansion joint AISI 321
- Long length
- Double-ply bellows material
- Extended length
- Carbon steel weld ends
- Max. temperature: 550 °C
- Max. pressure: 2,5 bar (50 °C)
- Stock item



TECHNICAL DRAWING



Balance III: DN100-350

PRODUCT DATA¹

PART NO.	DN	L1	BELLOWS (MATERIAL: AISI 321)			WELDING ENDS (MATERIAL: CARBON STEEL)			MOVEMENTS ² (MM)		SPRINGRATE (N/MM)	
			B (mm)	Plies	Thickness (mm)	A (mm)	C (mm)	L2 (mm)	Axial +/-	Lateral +/-	Axial +/-	Lateral +/-
330 030 100	100	285	140,5	2	0,3	114,3	3,6	60	45	20	28	150
330 030 125	125	295	165,7	2	0,3	139,7	3,6	65	45	20	33	200
330 030 150	150	295	200,5	2	0,3	168,3	4,0	60	45	20	26	170
330 030 200	200	315	251,1	2	0,3	219,1	4,5	70	45	20	32	247
330 030 250	250	315	305,2	2	0,3	273,0	5,0	70	45	20	40	357
330 030 300	300	345	360,9	2	0,3	323,9	5,6	68	50	15	31	307
330 030 350	350	345	392,6	2	0,3	355,6	5,6	68	50	15	34	351

Note:

1. Other stainless steel grades and diameters available on request
2. Axial and lateral movements are not to be used in combination



BALANCE IV: DN40-300

BALANCE IV: DN40-300

The Balance IV is a relatively short stainless steel expansion joint with carbon steel weld ends. It is used to accommodate axial movements and lateral misalignments in piping systems in situations with limited installation space. Despite its short length, it can accommodate small lateral movements. Due to the double-ply bellows, this compensator is more flexible in comparison to similar single-ply compensators. The maximum operating temperature of the Balance IV is +550 °C, the maximum working pressure 2,5 bar (50 °C).

APPROVALS

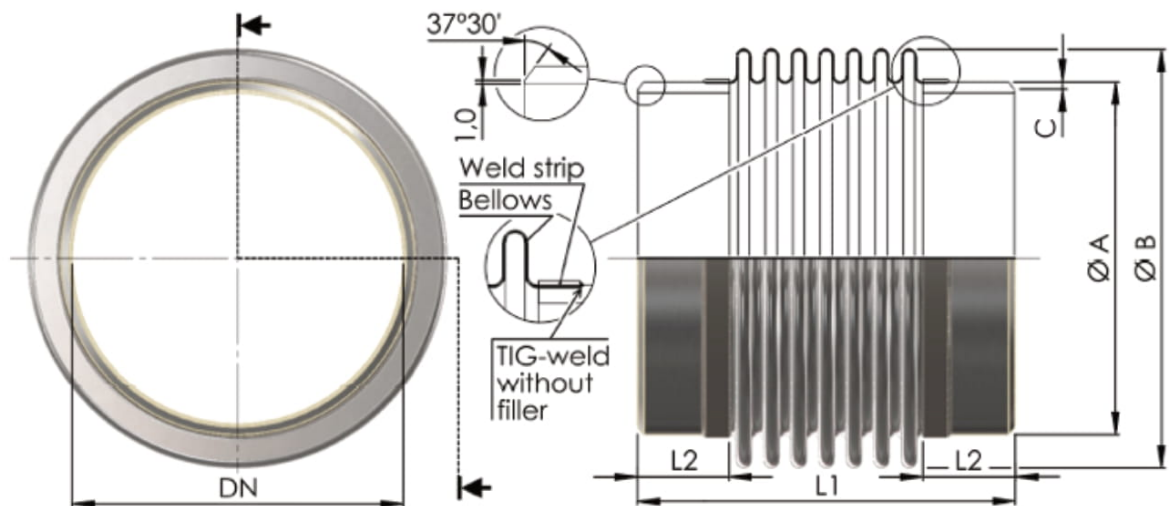
Type approval available on request.

CHARACTERISTICS

- Stainless steel expansion joint AISI 321
- Double-ply bellows material
- Short length
- Carbon steel weld ends
- Max. temperature: 550 °C
- Max. pressure: 2,5 bar (50 °C)
- Stock item



TECHNICAL DRAWING



BALANCE IV: DN40-300

PRODUCT DATA¹

PART NO.	DN	L1	BELLOWS (MATERIAL: AISI 321)			WELDING ENDS (MATERIAL: CARBON STEEL)			MOVEMENTS ² (MM)		SPRINGRATE (N/MM)	
			B (mm)	Plies	Thickness (mm)	A (mm)	S2 (mm)	L2 (mm)	Axial +/-	Lateral +/-	Axial +/-	Lateral +/-
330 040 040	40	150	60,3	1	0,3	48,3	2,6	30	25	8	47	89
330 040 050	50	150	78,3	2	0,3	60,3	2,9	30	25	8	68	166
330 040 065	65	150	96,7	2	0,3	76,1	2,9	30	25	8	56	169
330 040 080	80	150	109,7	2	0,3	88,9	3,2	30	25	8	63	219
330 040 100	100	150	140,5	2	0,3	114,3	3,6	37	25	6	59	293
330 040 125	125	150	165,7	2	0,3	139,7	3,6	35	25	5	71	420
330 040 150	150	150	200,5	2	0,3	168,3	4	35	25	5	56	389
330 040 200	200	150	251,1	2	0,3	219,1	4,5	35	25	5	69	608
330 040 250	250	150	305,2	2	0,3	273	5	35	25	4	86	933
330 040 300	300	150	360,9	2	0,3	323,9	5,6	35	25	4	81	1042

Note:

1. Other stainless steel grades and diameters available on request
2. Axial and lateral movements are not to be used in combination



BALANCE V: DN40-400

BALANCE V: DN40-400

The Balance V is a stainless steel expansion joint with fixed carbon steel flanges according to DIN PN 10. It is used to accommodate axial movements and relatively small lateral misalignments in piping systems. Due to its double-ply bellows, this compensator is more flexible in comparison to similar single-ply compensators. The maximum operating temperature of the Balance V is +550 °C, the maximum working pressure 2,5 bar (50 °C).

APPROVALS

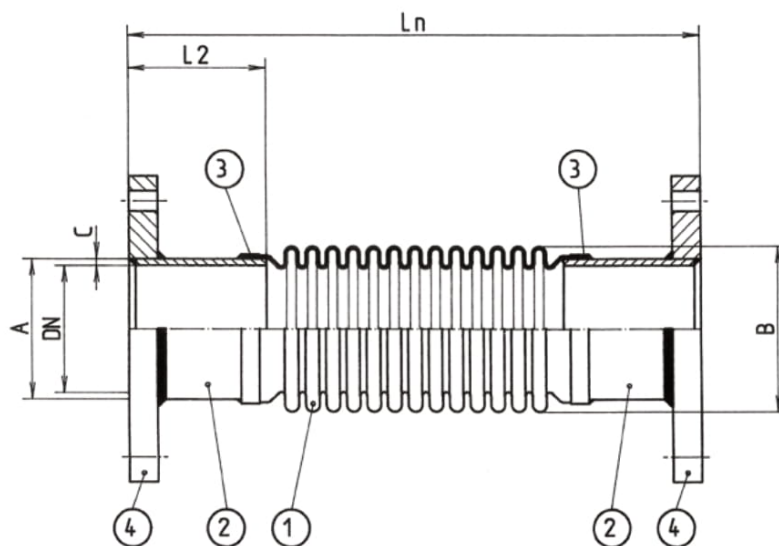
Type approval available on request.

CHARACTERISTICS

- Stainless steel expansion joint AISI 321
- Double-ply bellows material
- Standard length
- Fixed carbon steel flanges according to DIN PN 10
- Max. temperature: 550 °C
- Max. pressure: 2,5 bar (50 °C)
- Stock item



TECHNICAL DRAWING



BALANCE V: DN40-400

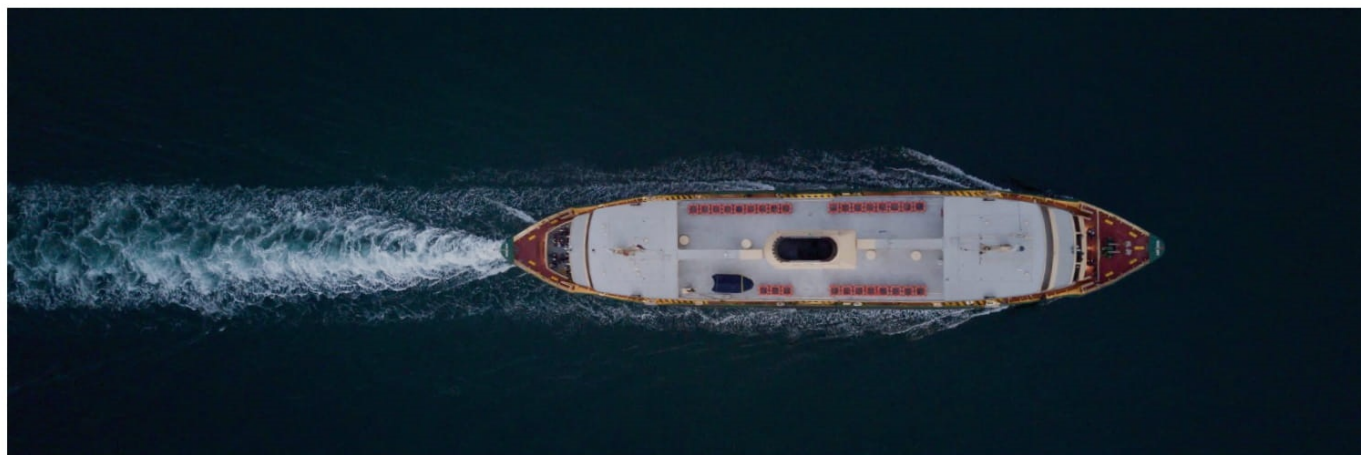
PRODUCT DATA¹

POSITION	QUANTITY	DESCRIPTION	MATERIAL	DIMENSIONS
1	1	Bellows	AISI 321	
2	2	Weld end	Carbon steel	
3	2	Weld strip	AISI 321	
4	2	Flange	Carbon steel	DIN PN 10

PART NO.	DN	Ln	BELLOWS (MATERIAL: AISI 321)				WELDING ENDS (MATERIAL: CARBON STEEL)			MOVEMENTS ² (MM)		SPRINGRATE (N/MM)	
			B (mm)	Conv.	Plies	Thickness (mm)	A (mm)	C2 (mm)	L2 (mm)	Axial +/-	Lateral +/-	Axial +/-	Lateral +/-
330 410 040	40	215	60,3	22	1	0,3	48,3	2,6	55	28	15	36	143
330 410 050	50	255	78,3	13	2	0,3	60,3	2,9	68	28	15	49	214
330 410 065	65	255	96,7	13	2	0,3	76,1	2,9	68	28	14	40	206
330 410 080	80	255	109,7	13	2	0,3	88,9	3,2	68	28	13	46	261
330 410 100	100	255	140,5	11	2	0,3	114,3	3,6	68	35	10	35	281
330 410 125	125	255	165,7	11	2	0,3	139,7	3,6	68	35	9	42	389
330 410 150	150	255	200,5	9	2	0,3	168,3	4,0	68	35	9	35	365
330 410 200	200	255	251,1	9	2	0,3	219,1	4,5	68	35	6	43	610
330 410 250	250	255	305,2	9	2	0,3	273,0	5,0	68	35	5	54	924
330 410 300	300	305	360,9	9	2	0,3	323,9	5,6	80	40	6	42	698
330 410 350	350	305	392,6	9	2	0,3	355,6	5,6	80	40	5	48	870
330 410 400	400	305	443,4	9	2	0,3	406,4	5,6	80	40	3	52	1157

Note:

1. Other stainless steel grades and diameters available on request
2. Axial and lateral movements are not to be used in combination



BALANCE VI: DN40-250

BALANCE VI: DN40-250

The Balance VI is a stainless steel expansion joint with rotating galvanized carbon steel flanges according to DIN PN 16. It is used for compensating axial movements in piping systems under high pressure. Due to its double-ply bellows, this compensator can compensate axial movements effectively. The maximum operating temperature of the Balance VI is +300 °C, the maximum working pressure 16 bar (120 °C).

APPROVALS

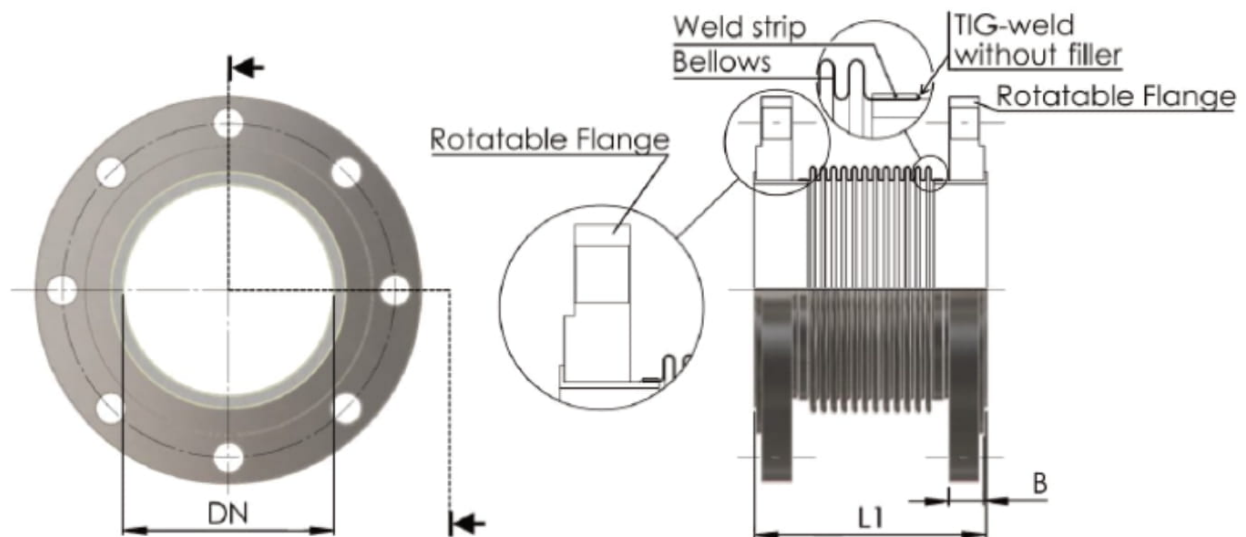
Type approval available on request.

CHARACTERISTICS

- Stainless steel expansion joint AISI 321
- Galvanized carbon steel flanges acc. DIN PN 16
- Rotating flanges
- Double-ply bellows material (except DN40)
- Standard length $L=130$
- Max. temperature: 300 °C
- Max. pressure: 16 bar (120 °C)
- Stock item



TECHNICAL DRAWING



BALANCE VI: DN40-250

PRODUCT DATA¹

PART NO.	DN	L	BELLWS (MATERIAL: AISI 321)			FLANGE (MATERIAL: CARBON STEEL)					MOVEMENT	SPRINGRATE
			CONV.	Plies	Thickness (mm)	D Outside (mm)	K	D Inside (mm)	Holes x d	B	Axial (mm)	N/mm
300 231 040	40	130	20	1	0,3	150	110	48,3	4 x 18	16	± 12	82
300 231 050	50	130	16	2	0,3	165	125	60,3	4 x 18	18	± 17	60
300 231 065	65	130	14	2	0,3	185	145	76,1	4 x 18	18	± 20	50
300 231 080	80	130	13	2	0,3	200	160	88,9	8 x 18	20	± 23	41
300 231 100	100	130	12	2	0,3	220	180	114,3	8 x 18	20	± 29	37
300 231 125	125	130	12	2	0,3	250	210	139,7	8 x 18	22	± 32	35
300 231 150	150	130	12	2	0,4	285	240	168,3	8 x 22	22	± 27	69
300 231 200	200	130	8	2	0,4	340	295	219,1	12 x 22	24	± 32	95
300 231 250	250	130	7	2	0,4	405	355	273	12 x 22	26	± 35	83

Notes:

1. Other SS grades and diameters available upon request



BALANCE VII: DN40-600

BALANCE VII: DN40-600

The Balance VII is a stainless steel expansion joint with stainless steel weld ends. It is used to accommodate axial movements and relatively small lateral misalignments in piping systems. Due to its double-ply bellows, this compensator is more flexible in comparison to similar single-ply compensators. The maximum operating temperature of the Balance VII is +550 °C, the maximum working pressure 2,5 bar (120 °C).

APPROVALS

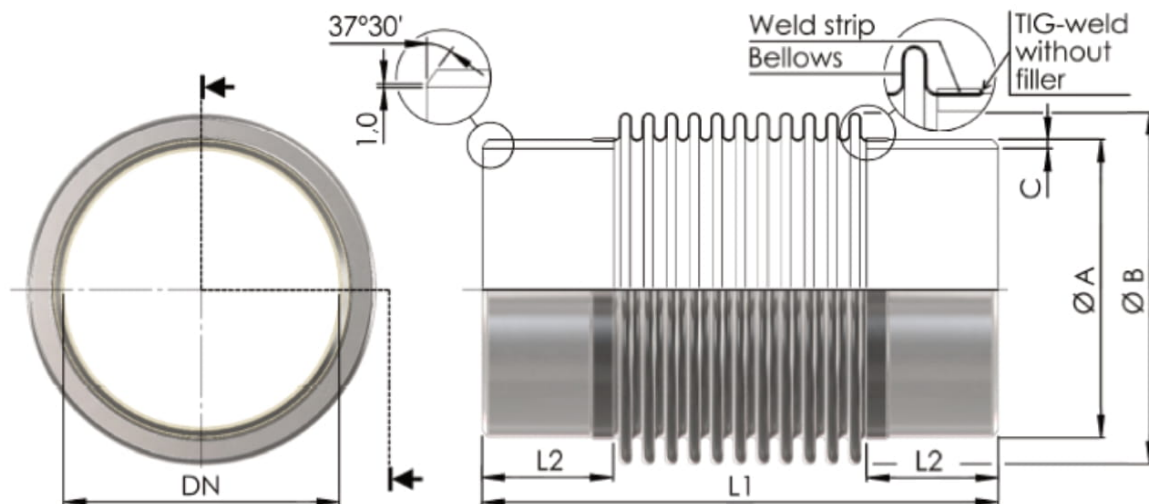
Type approval available on request.

CHARACTERISTICS

- Stainless steel expansion joint AISI 316 TI
- Stainless steel weld ends AISI 316 TI
- Double-ply bellows material
- Standard length
- Max. temperature: 550 °C
- Max. pressure: 2,5 bar (120 °C)
- Stock item



TECHNICAL DRAWING



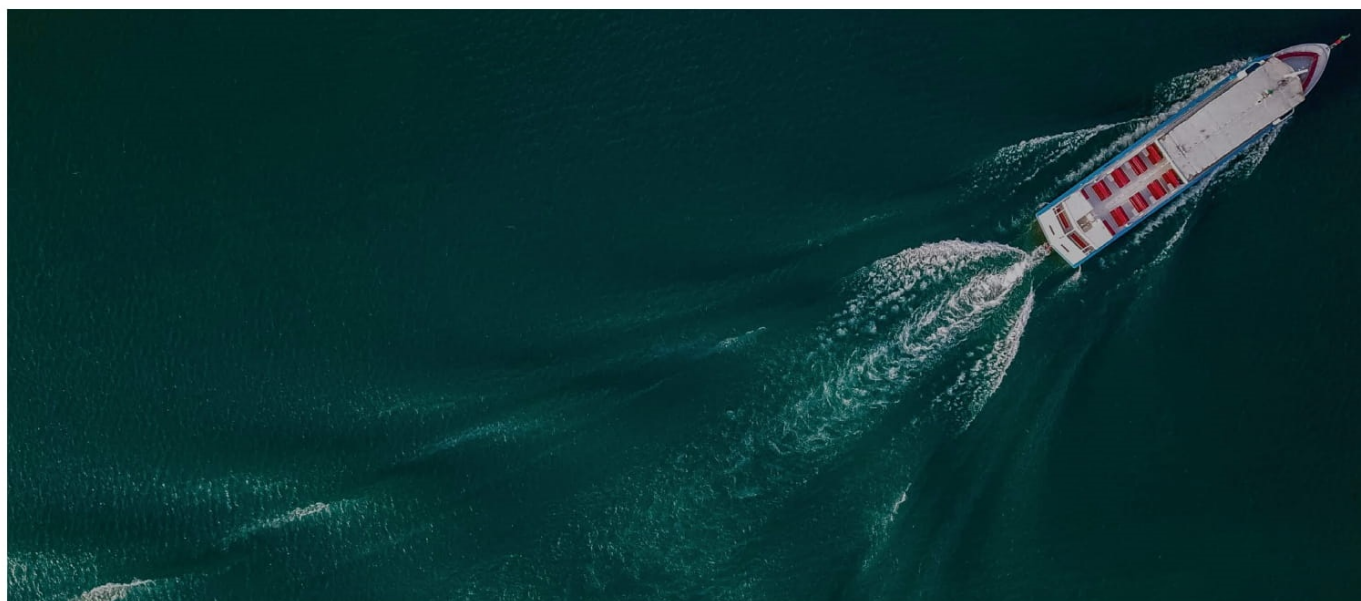
BALANCE VII: DN40-600

PRODUCT DATA¹

PART NO.	DN	L1	BELLOWS MATERIAL: AISI 316Ti (1.4571)				WELDING ENDS MATERIAL: CARBON STEEL			MOVEMENTS ² (MM)		SPRINGRATE (N/MM)	
			B (mm)	Conv	Plies	Thickness (mm)	A (mm)	C (mm)	L2 (mm)	Axial +/-	Lateral +/-	Axial +/-	Lateral +/-
300 250 040	40	245	57,7	22	1	0,3	48,3	2	50	29	18	30	7
300 250 050	50	245	69,7	13	2	0,3	60,3	2	50	29	15	34	11
300 250 065	65	245	87,5	13	2	0,3	76,1	2	50	32	15	56	50
300 250 080	80	245	100,3	13	2	0,3	88,9	2	50	38	15	53	35
300 250 100	100	245	129,8	11	2	0,3	114,3	2	50	44	10	34	40
300 250 125	125	245	157,8	11	2	0,3	139,7	2	50	33	10	86	122
300 250 150	150	245	186,6	9	2	0,3	168,3	2	50	38	10	91	229
300 250 200	200	245	239,7	9	2	0,3	219,1	2	50	27	10	108	465
300 250 250	250	245	293,6	9	2	0,3	273	2	50	38	8	76	509
300 250 300	300	295	346,5	9	2	0,3	323,9	2	50	45	7	76	773
300 250 350	350	295	378,2	9	2	0,3	355,6	2	70	44	6	112	1330
300 250 400	400	295	435	9	2	0,3	406,4	2	60	50	3	91	1144
300 250 450	450	300	487,8	8	2	0,4	457	2	60	50	3	101	1081
300 250 500	500	340	585,6	9	2	0,4	508	3	70	73	2	89	1526
300 250 600	600	330	642,6	9	2	0,4	610	3	70	68	2	119	2027

Note:

1. Other stainless steel grades and diameters available on request
2. Axial and lateral movements are not to be used in combination



BALANCE VIII: DN80-1600

BALANCE VIII: DN80-1600

The Balance VIII is a relatively short stainless steel expansion joint with rotating flanges. It is used to accommodate axial movements and lateral misalignments in piping systems in situations with limited installation space. Due to its double-ply bellows and rotating flanges, this compensator is still able to compensate relatively large movements. The Balance VIII is supplied at pre-stressed length to reduce the reaction forces to the foundation in operating conditions (high temperature). The maximum operating temperature of the Balance VIII is +550 °C, the maximum working pressure 2,5 bar (120 °C).

APPROVALS

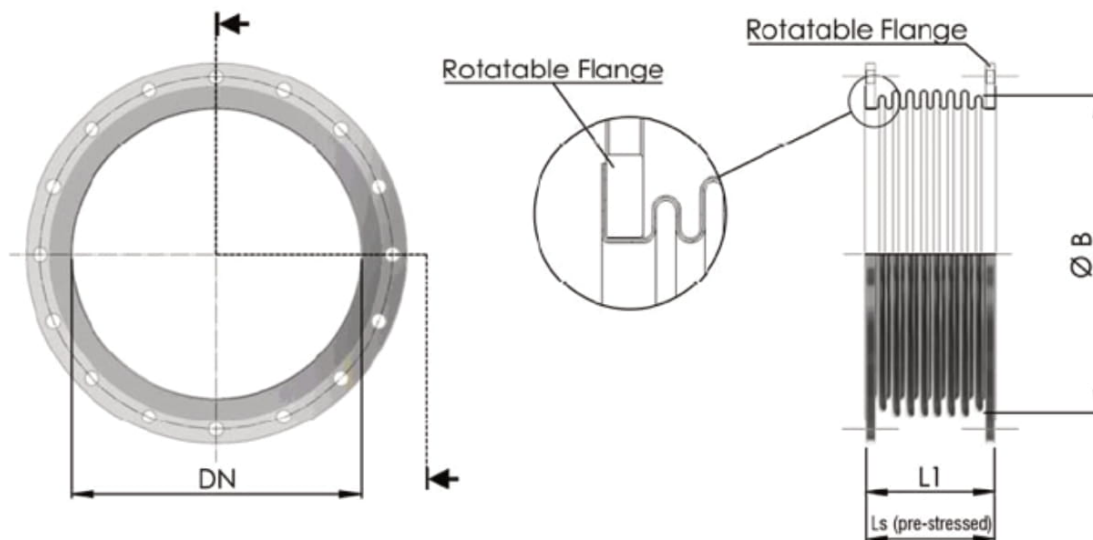
Type approval available on request.

CHARACTERISTICS

- Stainless steel expansion joint AISI 321
- With rotating flanges acc. DIN 86044 (<DN200 - PN10)
- Double-ply bellows material
- Standard length
- Max. temperature: 550 °C
- Max. pressure: 2,5 bar (120 °C)
- Alternative flange dimensions available
- Stock item
- Supplied at pre-stressed length



TECHNICAL DRAWING



Note:

1. Other stainless steel grades and diameters available on request
2. Axial and lateral movements are not to be used in combination

BALANCE VIII: DN80-1600

DN	ARTICLE NO.	L1	LS	BELLOWS (AISI 321) (MM)			MOVEMENTS ² (MM)		SPRINGRATE (N/MM)		FLANGE (CARBON STEEL) (MM)		
				B	THICKNESS	PLIES	AXIAL	LATERAL	AXIAL +/-	LATERAL +/-	D OUTSIDE	BOLT CIRCLE	HOLE X d
80	302 610 080		200	100	0,3	2	+ 10 / - 50	+/- 15	35	25	200	160	8 X 18
	302 610 081	180					+/- 30						
100	302 610 100		170	152	0,3	2	+ 13 / - 53	+/- 10	22	41	220	180	8 X 18
	302 610 101	150					+/- 33						
125	302 610 125		210	182	0,3	2	+ 10 / - 60	+/- 11	26	43	250	210	8 X 18
	302 610 126	185					+/- 35						
150	302 610 150		225	208	0,3	2	+ 15 / - 65	+/- 12	30	60	285	240	8 X 22
	302 610 151	200					+/- 40						
175	302 610 175		230	238	0,3	2	+ 15 / - 65	+/- 10	28	67	315	270	8 X 22
	302 610 176	205					+/- 40						
200	302 610 200		215	258	0,3	2	+ 14 / - 74	+/- 10	21	69	320	280	8 X 18
	302 610 201	185					+/- 44						
250	302 610 250		215	315	0,4	2	+ 12 / - 72	+/- 8	41	210	375	335	12 X 18
	302 610 251	185					+/- 42						
300	302 610 300		210	368	0,4	2	+ 15 / - 75	+/- 7	40	329	440	395	12 X 22
	302 610 301	180					+/- 45						
350	302 610 350		210	409	0,4	2	+ 14 / - 74	+/- 6	39	384	490	445	12 X 22
	302 610 351	180					+/- 44						
400	302 610 400		265	466	0,4	2	+ 20 / - 110	+/- 10	26	195	540	495	16 X 22
	302 610 401	220					+/- 65						
450	302 610 450		215	520	0,4	2	+ 15 / - 85	+/- 5	33	483	595	550	16 X 22
	302 610 451	180					+/- 50						
500	302 610 500		280	571	0,4	2	+ 23 / - 123	+/- 9	33	347	645	600	20 X 22
	302 610 501	230					+/- 73						
550	302 610 550		290	623	0,4	2	+ 23 / - 123	+/- 8	36	417	703	650	20 X 22
	302 610 551	240					+/- 73						
600	302 610 600		275	675	0,4	2	+ 23 / - 123	+/- 7	40	633	754	700	20 X 22
	302 610 601	230					+/- 68						
700	302 610 700		275	773	0,4	2	+ 18 / - 108	+/- 5	40	902	856	800	24 X 22
	302 610 701	230					+/- 63						
800	302 610 800		275	873	0,5	2	+ 21 / - 111	+/- 5	59	1637	958	900	24 X 22
	302 610 801	230					+/- 66						
900	302 610 900		275	983	0,5	2	+ 21 / - 111	+/- 4	62	2286	1060	1010	28 X 22
	302 610 901	230					+/- 66						
1000	302 611 000		275	1083	0,5	2	+ 21 / - 111	+/- 4	65	2689	1162	1110	32 X 22
	302 611 001	230					+/- 66						
1100	302 611 100		275	1183	0,6	2	+ 21 / - 111	+/- 3	68	3152	1266	1210	32 X 22
	302 611 101	230					+/- 66						
1200	302 611 200		275	1283	0,6	2	+ 21 / - 111	+/- 3	83	4625	1366	1310	36 X 22
	302 611 201	230					+/- 66						
1300	302 611 300		275	1383	0,8	2	+ 21 / - 111	+/- 3	90	5880	1466	1410	40 X 22
	302 611 301	230					+/- 66						
1400	302 611 400		275	1483	0,8	2	+ 21 / - 111	+/- 2	225	17721	1566	1510	40 X 22
	302 611 401	230					+/- 66						
1500	302 611 500		275	1583	0,8	2	+ 21 / - 111	+/- 2	241	21875	1666	1610	44 X 22
	302 611 501	230					+/- 66						
1600	302 611 600		275	1683	0,8	2	+ 21 / - 111	+/- 2	257	26630	1766	1710	48 X 22
	302 611 601	230					+/- 66						

BALANCE IX TWIN: DN80-1600

BALANCE IX TWIN: DN80-1600

The Balance IX Twin is a relatively long stainless steel expansion joint with twin bellows construction and rotating flanges. It is used to accommodate axial movements and relatively large lateral misalignments in piping systems. Due to its double-ply bellows, this compensator is more flexible in comparison to similar single-ply compensators. The Balance IX Twin is supplied at pre-stressed length to reduce the reaction forces to the foundation in operating conditions (high temperature). The maximum operating temperature of the Balance IX is +550 °C, the maximum working pressure 2,5 bar (120 °C).

APPROVALS

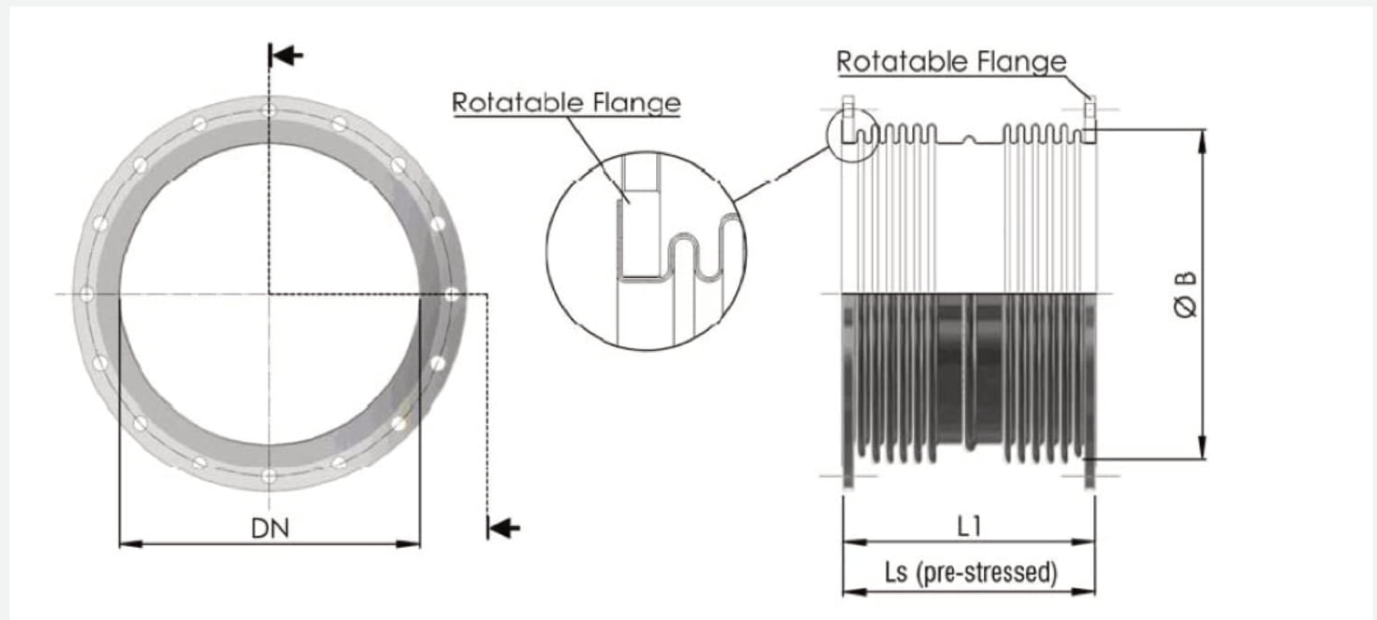
Type approval available on request.

CHARACTERISTICS

- Stainless steel expansion joint AISI 321
- With rotating flanges acc. DIN 86044 (<DN200 - PN10)
- Twin bellows construction
- Double-ply bellows material
- Standard length
- Max. temperature: 550 °C
- Max. pressure: 2,5 bar (120 °C)
- Alternative flange dimensions available
- Stock item
- Supplied at pre-stressed length



TECHNICAL DRAWING



Note:

1. Other stainless steel grades and diameters available on request
2. Axial and lateral movements are not to be used in combination

BALANCE IX TWIN: DN80-1600

DN	ARTICLE NO.	L1	LS	BELLOWS (AISI 321) (MM)			MOVEMENTS ² (MM)		SPRINGRATE (N/MM)		FLANGE (CARBON STEEL) (MM)		
				B	THICK-NESS	PLIES	AXIAL	LATERAL	AXIAL +/-	LATERAL +/-	D OUTSIDE	BOLT CIRCLE	HOLES X d
80	300 270 080		365				+ 13 / - 63						
	300 270 081	340		100	0,3	2	+/- 38	+/- 63	26	2	200	160	8 X 18
100	300 270 100		315				+ 11 / - 61						
	300 270 101	290		141	0,3	2	+/- 36	+/- 42	22	5	220	180	8 X 18
125	300 270 125		305				+ 12 / - 52						
	300 270 126	285		168	0,3	2	+/- 32	+/- 30	28	10	250	210	8 X 18
150	300 270 150		370				+ 15 / - 75						
	300 270 151	340		196	0,3	2	+/- 45	+/- 46	25	9	285	240	8 X 22
175	300 270 175		375				+ 14 / - 74						
	300 270 176	345		224	0,3	2	+/- 44	+/- 40	26	12	315	270	8 X 22
200	300 270 200		365				+ 19 / - 79						
	300 270 201	335		244	0,4	2	+/- 49	+/- 40	40	22	320	280	8 X 18
250	300 270 250		365				+ 17 / - 77						
	300 270 251	335		299	0,4	2	+/- 47	+/- 30	28	25	375	335	12 X 18
300	300 270 300		345				+ 15 / - 85						
	300 270 301	310		353	0,4	2	+/- 50	+/- 26	30	46	440	395	12 X 22
350	300 270 350		345				+ 15 / - 85						
	300 270 351	310		400	0,4	2	+/- 50	+/- 24	29	54	490	445	12 X 22
400	300 270 400		425				+ 23 / - 123						
	300 270 401	375		450	0,5	2	+/- 73	+/- 35	33	53	540	495	16 X 22
450	300 270 450		430				+ 21 / - 121						
	300 270 451	380		500	0,5	2	+/- 71	+/- 30	43	82	595	550	16 X 22
500	300 270 500		390				+ 22 / - 102						
	300 270 501	350		550	0,5	2	+/- 62	+/- 24	47	125	645	600	20 X 22
550	300 270 550		400				+ 22 / - 102						
	300 270 551	360		600	0,5	2	+/- 62	+/- 22	51	169	703	650	20 X 22
600	300 270 600		490				+ 22 / - 122						
	300 270 601	440		650	0,5	2	+/- 72	+/- 31	42	108	754	700	20 X 22
700	300 270 700		520				+ 24 / - 134						
	300 270 701	465		750	0,5	2	+/- 79	+/- 31	53	151	856	800	24 X 22
800	300 270 800		520				+ 24 / - 134						
	300 270 801	465		850	0,5	2	+/- 79	+/- 27	41	153	958	900	24 X 22
900	300 270 900		520				+ 24 / - 134						
	300 270 901	465		950	0,5	2	+/- 79	+/- 25	46	210	1060	1010	28 X 22
1000	300 271 000		520				+ 24 / - 134						
	300 271 001	465		1050	0,5	2	+/- 79	+/- 21	58	309	1162	1110	32 X 22
1100	300 271 100		520				+ 24 / - 134						
	300 271 101	465		1150	0,6	2	+/- 79	+/- 19	70	451	1266	1210	32 X 22
1200	300 271 200		520				+ 24 / - 134						
	300 271 201	465		1250	0,6	2	+/- 79	+/- 17	75	571	1366	1310	36 X 22
1300	300 271 300		520				+ 24 / - 134						
	300 271 301	465		1350	0,8	2	+/- 79	+/- 12	140	1069	1466	1410	40 X 22
1400	300 271 400		520				+ 24 / - 134						
	300 271 401	465		1450	0,8	2	+/- 79	+/- 11	151	1320	1566	1510	40 X 22
1500	300 271 500		520				+ 24 / - 134						
	300 271 501	465		1550	0,8	2	+/- 79	+/- 10	161	1607	1666	1610	44 X 22
1600	300 271 600		520				+ 24 / - 134						
	300 271 601	465		1650	0,8	2	+/- 79	+/- 10	171	1932	1766	1710	48 X 22

BALANCE X: DN80-450

BALANCE X: DN80-450

The Balance X is a stainless steel expansion joint with rotating flanges according to DIN PN 6. It is used to accommodate axial movements and lateral misalignments in piping systems. Due to its double-ply bellows, this compensator is more flexible in comparison to similar single-ply compensators. The maximum operating temperature of the Balance X is +550 °C, the maximum working pressure 2,5 bar (120 °C).

APPROVALS

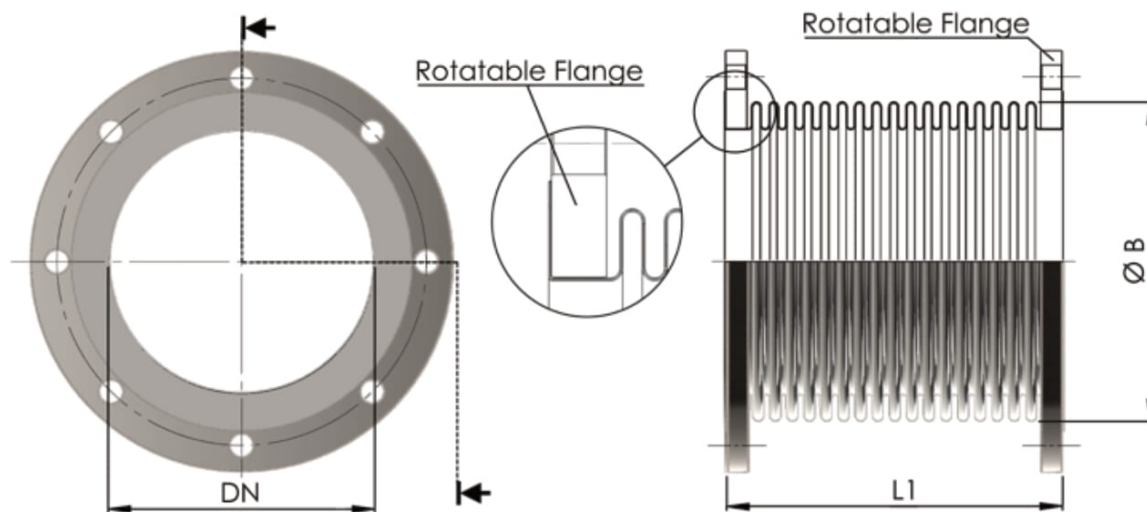
Type approval available on request.

CHARACTERISTICS

- Stainless steel expansion joint AISI 321
- With rotating flanges acc. DIN PN 6
- Double-ply bellows material
- Standard length
- Max. temperature: 550 °C
- Max. pressure: 2,5 bar (120 °C)
- Stock item



TECHNICAL DRAWING



BALANCE X: DN80-450

PRODUCT DATA¹

PART NO.	DN	L1	BELLOWS (MATERIAL: AISI 321)			FLANGE (MATERIAL: CARBON STEEL)			MOVEMENTS ² (MM)		SPRINGRATE (N/MM)	
			B	Plies	Thickness (mm)	D Outside	Bolt Circle	Holes x d	Axial +/-	Lateral +/-	Axial +/-	Lateral +/-
330 420 080	80	255	100.2	2	0,3	190	150	4 x 18	50	19	24	41
330 420 100	100	255	132.2	2	0,3	210	170	4 x 18	50	15	27	44
330 420 125	125	255	159.2	2	0,3	240	200	8 x 18	48	15	48	80
330 420 150	150	255	183.2	2	0,3	265	225	8 x 18	50	13	53	95
330 420 175	175	255	211	2	0,3	295	255	8 x 18	49	12	63	148
330 420 200	200	255	242	2	0,4	320	280	8 x 18	60	14	50	154
330 420 250	250	255	303	2	0,4	375	335	12 x 18	60	11	58	278
330 420 300	300	305	359	2	0,4	440	395	12 x 22	65	10	59	418
330 420 350	350	305	393	2	0,4	490	445	12 x 22	63	8	64	548
330 420 400	400	305	447	2	0,4	540	495	12 x 22	76	11	44	308
330 420 450	450	310	501	2	0,4	595	550	12 x 22	76	11	50	350

Note:

1. Other stainless steel grades and diameters available on request
2. Axial and lateral movements are not to be used in combination

