

# Metal Bellows Expansion Joints

Rotary Flanged, with/without Liner, PN16

## SD-918 Series

Axial expansion joints aim to absorb the axial expansions.

- They do not change the direction of the flow.
- Additional assemblage distance is not necessary.
- Dividing the pipeline helps to prevent stress of lateral forces.



### MOVEMENT ABSORPTION:

Axial shift and slight all-around movement of the expansion joint is possible. Axial expansion joints with two bellows are used to absorb larger movements.

### MOVEMENT ABSORPTION:

- Easy to absorb the expansion movements
- No direction changes of the flow
- Minimum application area
- Possible lateral and angular expansion absorption by the additional bellows.
- To provide a non-stressed area where the pressure is not too high such as pump and compressor applications.
- Low application costs

## Product Specifications:

Below Material	Stainless Steel AISI 321 (opt. 304, 316L 316TI, 309)
Connection Types	Fixed and Floating Flanged and Welded Ended
Flange Material	Carbon Steel St. 37.2 as standard, the material can be customized on request
Inner Sleeve	Stainless Steel AISI 321 (opt. 304, 316L 316TI, 309) on request
Working Temperature	80°C - 600°C
Working Pressure	PN2.5, PN6, PN16, PN25, PN40, PN64
Nominal Diameters	DN 25 (1") - DN 2600 (104")

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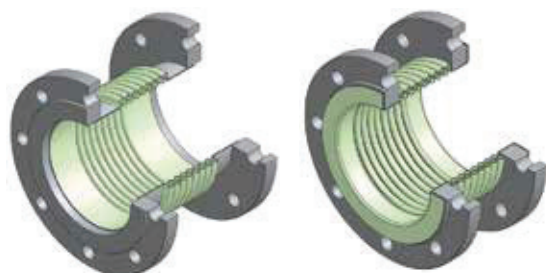
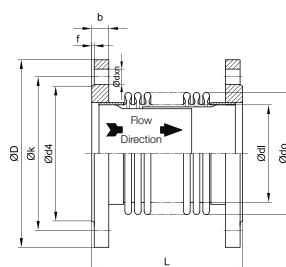
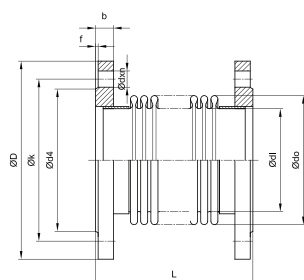
## Product Dimensions:

### AXIAL EXPANSION JOINT WITH 30MM EXPANSION CAPACITY WITH/WITHOUT INNER SLEEVE:

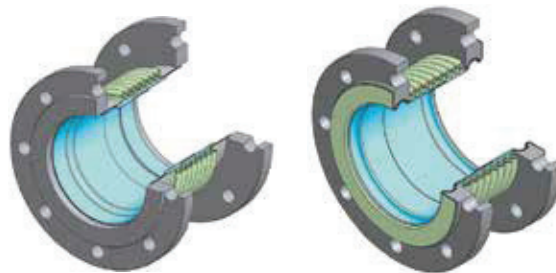
Model	Expansion Amount	Design Pressure	Design
SDSF-30	-10/+20mm	16 bar	Axial Expansion Joint with 30mm expansion capacity and fixed flanges without inner sleeve
SDDF-30	-10/+20mm	16 bar	Axial Expansion Joint with 30mm expansion capacity and floating flanges without inner sleeve
SDSF-30L	-10/+20mm	16 bar	Axial Expansion Joint with 30mm expansion capacity and fixed flanges with inner sleeve
SDDF-30L	-10/+20mm	16 bar	Axial Expansion Joint with 30mm expansion capacity and floating flanges with inner sleeve

**NOTE:**

- Special designed axial expansion joints with customized features are available on request.
- Subject to technical alterations and deviations resulting from the manufacturing process without giving any notification.



Without Inner Sleeve



With Inner Sleeve

Flange (DIN EN 1-1092) PN16							Bellow				SDSF30- / SDSF30-L		SDDF30- / SDDF30-L	
DN	ØD	ØK	ØD4	f	b	ØDxN	ØDI	ØDO	Effective Bellow Area	Axial Spring Rate	L	Code	L	Code
mm	mm	mm	mm	mm	mm	mm	mm	mm	cm²	n/mm	mm		mm	
25	115	85	68	2	16	Ø 14x4	38.0	48.2	14.58	82.1	120	702.041.101.002	110	702.031.101.002
32	140	100	78	2	18	Ø 18x4	42.4	55.0	18.62	49.7	125	702.041.101.004	115	702.031.101.004
40	150	110	88	3	18	Ø 18x4	48.3	61.0	23.44	60.8	130	702.041.101.006	120	702.031.101.006
50	165	125	102	3	20	Ø 18x4	60.3	76.0	36.46	104.5	120	702.041.101.008	110	702.031.101.008
65	185	145	122	3	20	Ø 18x4	76.1	95.0	57.45	87.8	120	702.041.101.010	110	702.031.101.010
80	200	160	138	3	20	Ø 18x8	88.9	111.0	78.42	178.9	120	702.041.101.012	110	702.031.101.012
100	220	180	158	3	22	Ø 18x8	114.3	140.0	137.09	252.2	130	702.041.101.014	115	702.031.101.014
125	250	210	188	3	22	Ø 18x8	139.7	164.0	181.01	320.0	135	172.041.101.016	130	172.031.101.016
150	285	240	212	3	24	Ø 23x8	168.3	200.0	266.20	196.4	160	702.041.101.018	145	702.031.101.018
200	340	295	168	3	26	Ø 23x12	219.1	250.0	431.86	694.2	160	702.041.101.020	140	702.031.101.020
250	405	355	320	3	29	Ø 27x12	273.0	323.0	697.11	590.0	170	702.041.101.022	150	702.031.101.022
300	460	410	378	4	32	Ø 27x12	323.9	380.0	972.37	496.8	170	702.041.101.024	150	702.031.101.024

NOTE: Other flange types made according to different standards (ANSI, BS, UNI) are also available.

### APPLICATION OF FIXED POINTS:

By using axial expansion joints in pipeline applications, it will be possible to build up well structured and freely moving straight pipelines. Axial expansion absorption can only be possible with applying appropriate guides which are strong enough to meet the pressure at both ends.

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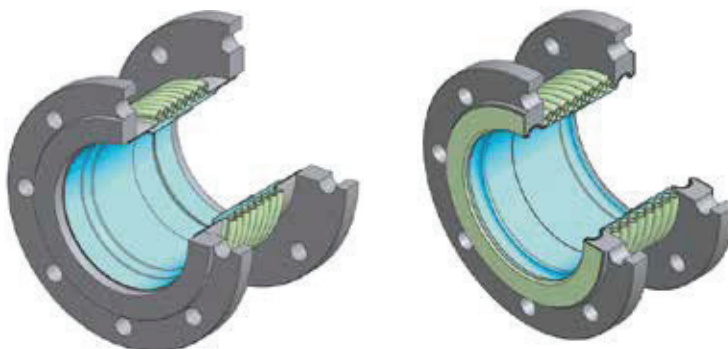
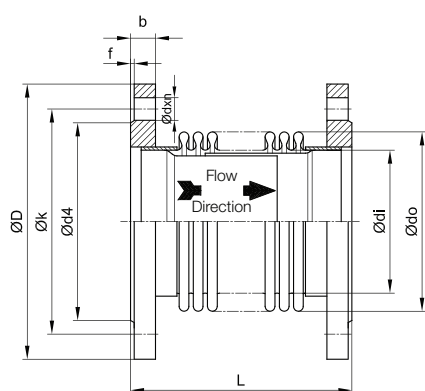
## Product Dimensions:

### AXIAL EXPANSION JOINT WITH 60MM EXPANSION CAPACITY WITH INNER SLEEVE:

Model	Expansion Amount	Design Pressure	Design
SDSF-60L	-20/+40mm	16 bar	Axial Expansion Joint with 60mm expansion capacity and fixed flanges
SDDF-60L	-20/+40mm	16 bar	Axial Expansion Joint with 60mm expansion capacity and floating flanges

**NOTE:**

- Special designed axial expansion joints with customized features are available on request.
- Subject to technical alterations and deviations resulting from the manufacturing process without giving any notification.



Flange (DIN EN 1-1092) PN16						Bellow				SDSF60-L		Code	
DN	OD	OK	OD4	f	b	ODxN	ODI	ODO	Effective Bellow Area	Axial Spring Rate	L	Code	L
mm	mm	mm	mm	mm	mm	mm	mm	mm	cm <sup>2</sup>	n/mm	mm		mm
50	165	125	102	3	20	Ø 18x4	60.3	76.0	36.46	55.7	200	702.041.202.008	190
65	185	145	122	3	20	Ø 18x4	76.1	95.0	57.45	43.9	205	702.041.202.010	195
80	200	160	138	3	20	Ø 18x8	88.9	111.0	78.42	89.4	200	702.041.202.012	190
100	220	180	158	3	22	Ø 18x8	114.3	140.0	137.09	126.1	215	702.041.202.014	200
125	250	210	188	3	22	Ø 18x8	139.7	164.0	181.01	160.0	225	172.041.202.016	210
150	285	240	212	3	24	Ø 23x8	168.3	200.0	266.20	98.2	250	702.041.202.018	245
200	340	295	168	3	26	Ø 23x12	219.1	250.0	431.86	347.1	265	702.041.202.020	245
250	405	355	320	3	29	Ø 27x12	273.0	323.0	697.11	295.0	270	702.041.202.022	250
300	460	410	378	4	32	Ø 27x12	323.9	380.0	972.37	248.4	170	702.041.202.024	250

NOTE: Other flange types made according to different standards (ANSI, BS, UNI) are also available.

## APPLICATION OF FIXED POINTS:

By using axial expansion joints in pipeline applications, it will be possible to build up well structured and freely moving straight pipelines. Axial expansion absorption can only be possible with applying appropriate guides which are strong enough to meet the pressure at both ends.

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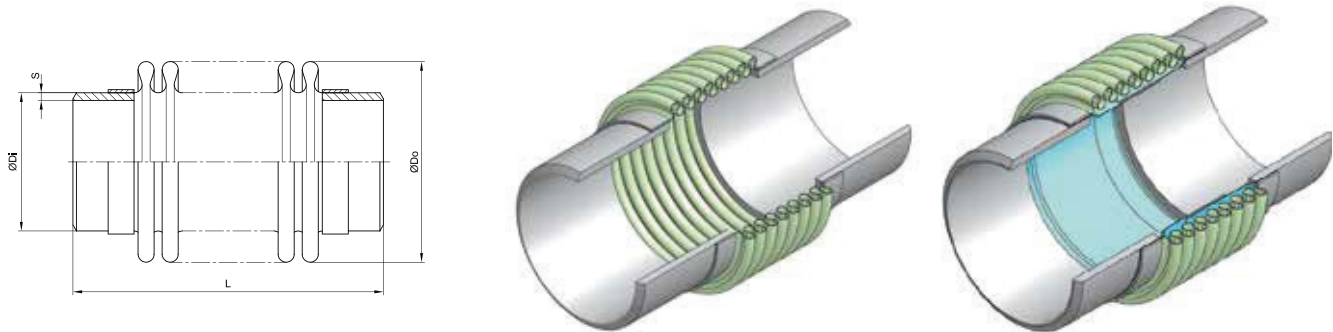
## Product Dimensions:

### AXIAL EXPANSION JOINT WITH WELDED ENDS:

Model	Expansion Amount	Design Pressure	Design
SDKB-30L	-10/+20mm	16 bar	Axial Expansion Joint with 30mm expansion capacity
SDKB-30L	-10/+20mm	16 bar	Axial Expansion Joint with 30mm expansion capacity and inner sleeve
SDKB-60L	-20/+40mm	16 bar	Axial Expansion Joint with 60mm expansion capacity and inner sleeve

**NOTE:**

- Special designed axial expansion joints with customized features are available on request.
- Subject to technical alterations and deviations resulting from the manufacturing process without giving any notification.



DN mm	Bellows				S mm	SDSF30-L		L m	Code		L mm	SDDF30-L	
	$\varnothing DI$ mm	$\varnothing DO$ mm	Effective Bellows Area cm <sup>2</sup>	Axial Spring Rate n/mm		L mm	Code		Code			Code	
25	38.0	48.8	14.58	82.1	2.6	210	702.051.101.006	210	702.051.102.006	-	-	-	-
32	42.4	55.6	18.62	49.7	2.6	215	702.051.101.008	215	702.051.102.008	-	-	-	-
40	48.3	61.5	23.44	60.8	2.6	220	702.051.101.010	220	702.051.102.010	-	-	-	-
50	60.3	76.9	36.46	104.5	2.9	210	702.051.101.012	210	702.051.102.012	290	702.051.202.012		
65	76.1	95.9	54.45	87.8	2.9	210	702.051.101.014	210	702.051.102.014	285	702.051.202.014		
80	88.9	112.1	78.42	178.9	3.2	215	702.051.101.016	215	702.051.102.016	300	702.051.202.016		
100	114.3	140.9	137.09	252.2	3.6	215	702.051.101.018	215	702.051.102.018	300	702.051.202.018		
125	139.7	165.7	181.01	320.0	4.0	220	702.051.101.020	220	702.051.102.020	310	702.051.202.020		
150	168.3	201.1	266.20	196.4	4.5	245	702.051.101.022	245	702.051.102.022	345	702.051.202.022		
200	219.1	252.3	431.86	694.2	6.3	235	702.051.101.024	235	702.051.102.024	340	702.051.202.024		
250	273.0	325.8	697.11	590.0	6.3	240	702.051.101.026	240	702.051.102.026	340	702.051.202.026		
300	323.9	382.9	972.37	496.8	7.1	250	702.051.101.028	250	702.051.102.028	340	702.051.202.028		

### APPLICATION OF FIXED POINTS:

By using axial expansion joints in pipeline applications, it will be possible to build up well structured and freely moving straight pipelines. Axial expansion absorption can only be possible with applying appropriate guides which are strong enough to meet the pressure at both ends.

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## Miscellaneous Data:

### 1. Ordering Information

Example: SD-918 Series-50

- SD-918 Series is the part number
- (50) Size

### 2. Contact Information

For further information on any aspect of the SHIELD Valves products please contact below:

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