



# HYDROFIRE ΕΠΕ

Buildings - Industry - Marine – Waterworks  
END OF AG. PANTELEIMONOS Str. (ELEONAS)  
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## AXIAL EXPANSION JOINTS



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Axial expansion joints aim to absorb the axial expansions.

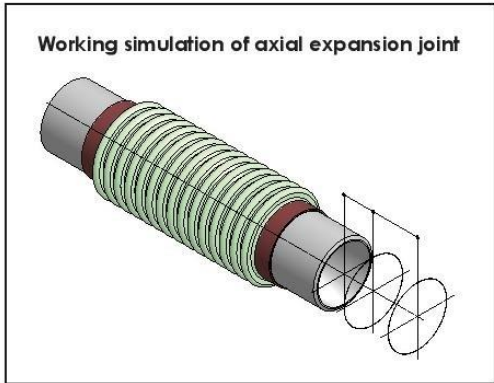
- They do not change the direction of the flow
- Additional assemblage distance is not necessary
- Dividing the pipeline helps to prevent stress of lateral forces

### 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.

### Advantages of Axial Expansion Joints

- 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



### DESIGN

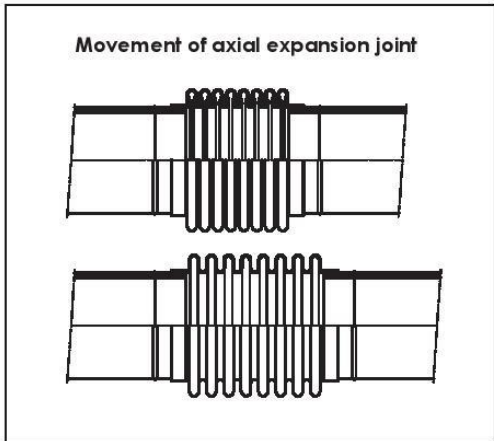
#### Structure

Bellow Material	Stainless Steel AISI 321 (opt.304,31 6L,31 6T1,309)
Connection Types	Fixed and Floating Flanged and Welded Ended
Flange Material	Carbon Steel St.37.2 as standard, the material can be customised on request
Inner Sleeve	Available in stainless steel AISI 321 (opt.304,31 6L,31 6T1,309) on request

#### Operation Conditions

Operating Temperature	-80C°/+600C°
Operating Pressure	Can be produced with different pressure rates PN 2,5/6/16/25/40/64

Nominal Diameters DN 25 (1") - DN 2600 (104")





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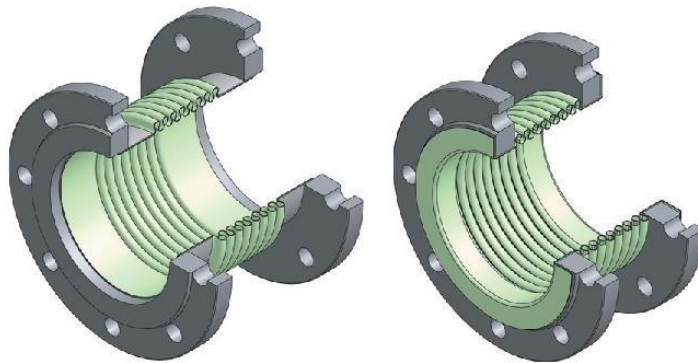
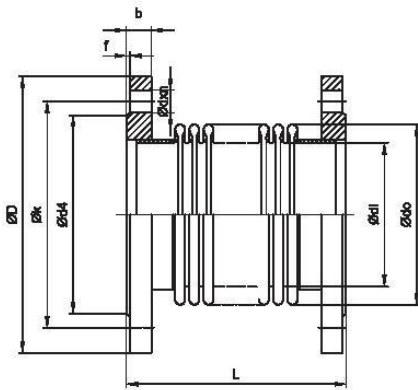
### Axial Expansion Joint with 30mm expansion capacity without inner sleeve

#### Available Types (Standard Versions)

Name	Expansion Amount	Design Pressure	Definition
MKSF-30	-10/+20mm	16 bar	Axial Expansion Joint with 30mm expansion capacity and fixed flanges
MKDF-30	-10/+20mm	16 bar	Axial Expansion Joint with 30mm expansion capacity and floating flanges

\* 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 1092/1) PN 16						Bellow					MKSF-30		MKDF-30	
DN	ØD	Øk	Ød4	f	b	Ødxn	Ødi	Ødo	Effective Bellow Area cm <sup>2</sup>	Axial Spring Rate N/mm	L	Code	L	Code
DN25	115	85	68	2	16	Ø 14x4	38	48,2	14,58	82,1	120	702.041.101.002	110	702.031.101.002
DN32	140	100	78	2	18	Ø 18x4	42,4	55	18,62	49,7	125	702.041.101.004	115	702.031.101.004
DN40	150	110	88	3	18	Ø 18x4	48,3	61	23,44	60,8	130	702.041.101.006	120	702.031.101.006
DN50	165	125	102	3	20	Ø 18x4	60,3	76	36,46	104,5	120	702.041.101.008	110	702.031.101.008
DN65	185	145	122	3	20	Ø 18x4	76,1	95	57,45	87,8	120	702.041.101.010	110	702.031.101.010
DN80	200	160	138	3	20	Ø 18x8	88,9	111	78,42	178,9	120	702.041.101.012	110	702.031.101.012
DN100	220	180	158	3	22	Ø 18x8	114,3	140	137,09	252,2	130	701.041.101.014	115	701.031.101.014
DN125	250	210	188	3	22	Ø 18x8	139,7	164	181,01	320,0	135	172.041.101.016	130	172.031.101.016
DN150	285	240	212	3	24	Ø 23x8	168,3	200	266,20	196,4	160	702.041.101.018	145	702.031.101.018
DN200	340	295	268	3	26	Ø 23x12	219,1	250	431,86	694,2	160	702.041.101.020	140	702.031.101.020
DN250	405	355	320	3	29	Ø 27x12	273	323	697,11	590,0	170	702.041.101.022	150	702.031.101.022
DN300	460	410	378	4	32	Ø 27x12	323,9	380	972,37	496,8	170	702.031.101.024	150	702.031.101.024

All the dimensions in the table are given in "mm".

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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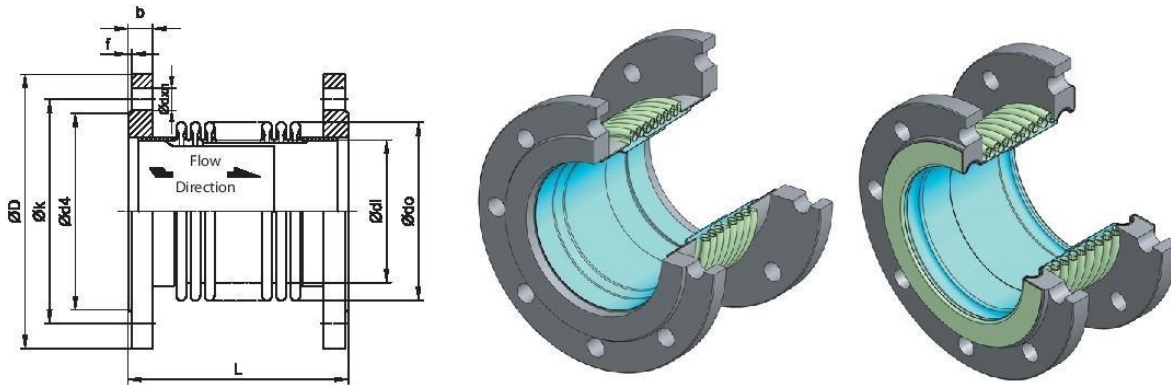
### Axial Expansion Joint with 30mm expansion capacity with inner sleeve

#### Available Types (Standard Versions)

Name	Expansion Amount	Design Pressure	Definition
MKSF-30L	-10/+20mm	16 bar	Axial Expansion Joint with 30mm expansion capacity and fixed flanges
MKDF-30L	-10/+20mm	16 bar	Axial Expansion Joint with 30mm expansion capacity and floating flanges

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Flange (DIN EN 1092/1) PN 16						Bellows					MKSF-30L		MKDF-30L	
DN	ØD	Øk	Ød4	f	b	Ødxn	Ødi	Ødo	Effective Bellows Area cm <sup>2</sup>	Axial Spring Rate N/mm	L	Code	L	Code
DN25	115	85	68	2	16	Ø 14x4	38	48,2	14,58	82,1	120	702.041.102.002	110	702.031.102.002
DN32	140	100	78	2	18	Ø 18x4	42,4	55	18,62	49,7	125	702.041.102.004	115	702.031.102.004
DN40	150	110	88	3	18	Ø 18x4	48,3	61	23,44	60,8	130	702.041.102.006	120	702.031.102.006
DN50	165	125	102	3	20	Ø 18x4	60,3	76	36,46	104,5	120	702.041.102.008	110	702.031.102.008
DN65	185	145	122	3	20	Ø 18x4	76,1	95	57,45	87,8	120	702.041.102.010	110	702.031.102.010
DN80	200	160	138	3	20	Ø 18x8	88,9	111	78,42	178,9	120	702.041.102.012	110	702.031.102.012
DN100	220	180	158	3	22	Ø 18x8	114,3	140	137,09	252,2	130	701.041.102.014	115	701.031.102.014
DN125	250	210	188	3	22	Ø 18x8	139,7	164	181,01	320,0	135	172.041.102.016	130	172.031.102.016
DN150	285	240	212	3	24	Ø 23x8	168,3	200	266,20	196,4	160	702.041.102.018	145	702.031.102.018
DN200	340	295	268	3	26	Ø 23x12	219,1	250	431,86	694,2	160	702.041.102.020	140	702.031.102.020
DN250	405	355	320	3	29	Ø 27x12	273	323	697,11	590,0	170	702.041.102.022	150	702.031.102.022
DN300	460	410	378	4	32	Ø 27x12	323,9	380	972,37	496,8	170	702.031.102.024	150	702.031.102.024

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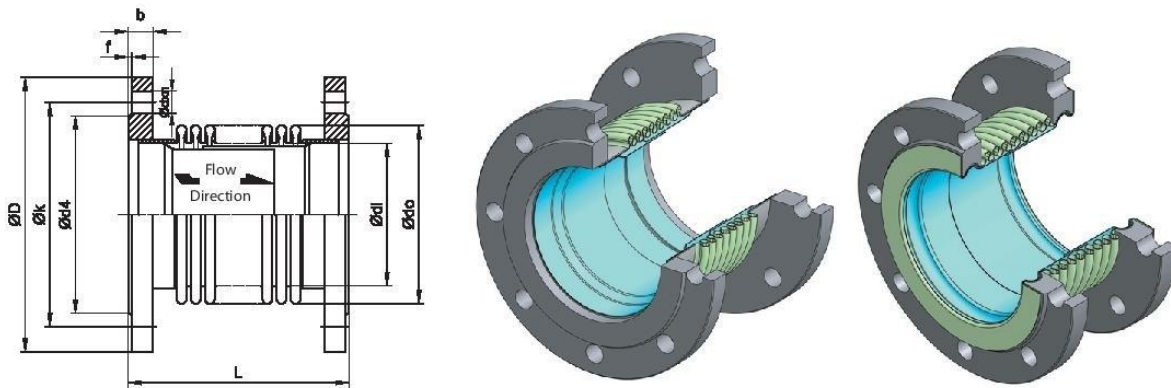
### Axial Expansion Joint with 60mm expansion capacity with inner sleeve

#### Available Types (Standard Versions)

Name	Expansion Amount	Design Pressure	Definition
MKSF-60L	-20/+40mm	16 bar	Axial Expansion Joint with 60mm expansion capacity and fixed flanges
MKDF-60L	-20/+40mm	16 bar	Axial Expansion Joint with 60mm expansion capacity and floating flanges

\* Special designed axial expansion joints with customized features are available on request.

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Flange (DIN EN 1092/1) PN 16					Bellows						MKSF-60L		MKDF-60L	
DN	ØD	Øk	Ød4	f	b	Ødxn	Ødi	Ødo	Effective Bellow Area cm <sup>2</sup>	Axial Spring Rate N/mm	L	Code	L	Code
DN50	165	125	102	3	20	Ø 18x4	60,3	76	36,46	55,7	200	702.041.202.008	190	702.031.202.008
DN65	185	145	122	3	20	Ø 18x4	76,1	95	57,45	43,9	205	702.041.202.010	195	702.031.202.010
DN80	200	160	138	3	20	Ø 18x8	88,9	111	78,42	89,4	200	702.041.202.012	190	702.031.202.012
DN100	220	180	158	3	22	Ø 18x8	114,3	140	137,09	126,1	215	701.041.202.014	200	701.031.202.014
DN125	250	210	188	3	22	Ø 18x8	139,7	164	181,01	160,0	225	172.041.202.016	210	172.031.202.016
DN150	285	240	212	3	24	Ø 23x8	168,3	200	266,20	98,2	250	702.041.202.018	245	702.031.202.018
DN200	340	295	268	3	26	Ø 23x12	219,1	250	431,86	347,1	265	702.041.202.020	245	702.031.202.020
DN250	405	355	320	3	29	Ø 27x12	273	323	697,11	295,0	270	702.041.202.022	250	702.031.202.022
DN300	460	410	378	4	32	Ø 27x12	323,9	380	972,37	248,4	170	702.031.202.024	250	702.031.202.024

All the dimensions in the table are given in "mm".

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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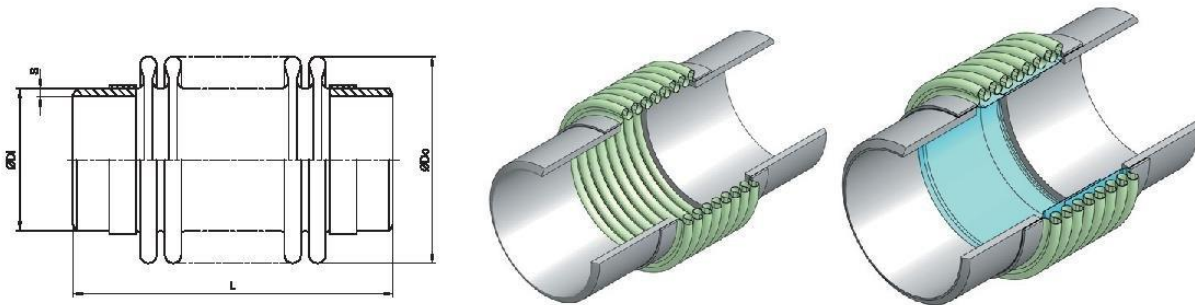
### Axial Expansion Joint with Welded ends

#### Available Types (Standard Versions)

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

\* Special designed axial expansion joints with customized features are available on request.

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DN	Bellow				S	MKKB-30		MKKB-30L		MKKB-60L	
	ØDi	ØDo	Effective Bellow Area cm <sup>2</sup>	Axial Spring Rate N/mm		L	Code	L	Code	L	Code
DN25	38	48,8	14,58	82,1	2,6	210	702.051.101.006	210	702.051.102.006		
DN32	42,4	55,6	18,62	49,7	2,6	215	702.051.101.008	215	702.051.102.008		
DN40	48,3	61,5	23,44	60,8	2,6	220	702.051.101.010	220	702.051.102.010		
DN50	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
DN65	76,1	95,9	57,45	87,8	2,9	210	701.051.101.014	210	701.051.102.014	285	701.051.202.014
DN80	88,9	112,1	78,42	178,9	3,2	215	172.051.101.016	215	172.051.102.016	300	172.051.202.016
DN100	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
DN125	139,7	165,7	181,01	320,0	4	220	702.051.101.020	220	702.051.102.020	310	702.051.202.020
DN150	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
DN200	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
DN250	273	325,8	697,11	590,0	6,3	240	702.051.101.026	240	702.051.102.026	340	702.051.202.026
DN300	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

All the dimensions in the table are given in "mm".

#### 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.