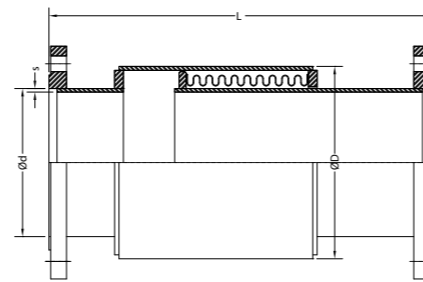


# EXTERNALLY PRESSURIZED Expansion Joints



## DESIGN VALUES

DN	25-1000
Bellows Material	304, 316, 321
Balance of Material	Carbon Steel, Stainless Steel
Design Pressure	up to 40 barg
Design Temperature	up to 400°C



Externally pressurised expansion joints are the perfect solution when axial movements and pressure is high.

Bellows elements of externally pressurised expansion joints are arranged so that the media flow is on the external side of the bellows, while the inside part of the bellows is only subjected to atmospheric pressure with this side being in direct connection with the atmosphere.

External pressurising of the bellows eliminates column instability as a design limitation while permitting the absorption of large axial movement. While an internally pressurised bellows will become unstable and buckle due to internal pressure, pressure around an externally pressurised bellows will have a stabilising effect on the bellows. This makes it possible to achieve a construction of externally pressurised expansion joints with great flexibility for large axial compensation. With only the outside of the bellows subjected to pressure and the convolutions packed under a cover, the perfect conditions for external insulation or underground installation can be achieved.

As the convolutions of externally pressurised expansion joints are well protected under a cover, damage during transportation and installation is unlikely to occur but most importantly, the cover offers maximum protection against leaking bellows or bellows failure.

## Advantages

- » Externally pressurised expansion joints are used if there will be large axial movements
- » This type of expansion joint pressurizes the bellows externally, eliminating column instability concerns for the bellows
- » This configuration provides an outside cover protecting bellows from external elements and inside pipe acts as a liner protecting bellows from flow medium and streamlines the flow
- » Minimizing pressure losses

## Applications

- » Hot & Cold water pipelines
- » Superheated water
- » Steam and condensate pipelines
- » Industrial applications
- » HVAC lines
- » In large plants with thermal equilibrium and mechanical expansion
- » Geothermal plants
- » Integrated city district heating
- » The widest application area is underground pipe lines



## Flanged End

Nominal Diameter (DN)	Design Pressure (barg)	Axial (-) (mm) Length (L) (mm)				Ød (mm)	s (mm)	ØD (mm)	Effective Area (cm <sup>2</sup> )	
		30	60	90	120					
25	1"	40	275	395	520	-	33,7	2,6	88,9	54
32	1 1/4"	40	285	405	530	-	42,4	3,2	88,9	54
40	1 1/2"	40	295	415	535	-	48,3	3,2	88,9	54
50	2"	40	300	420	555	710	60,3	3,6	114,3	89
65	2 1/2"	40	315	430	560	715	76,1	3,6	114,3	91
80	3"	25	315	435	585	725	88,9	4,0	139,7	141
100	4"	25	320	450	585	750	114,3	4,5	165,0	196
125	5"	25	335	465	595	765	139,7	5,0	193,7	272
150	6"	25	345	475	615	790	165,0	5,0	219,1	346
200	8"	25	395	520	685	860	219,1	4,5	323,9	572
250	10"	25	420	585	760	950	273,0	5,6	355,6	829

## Weld End

Nominal Diameter (DN)	Design Pressure (barg)	Axial (-) (mm) Length (L) (mm)				Ød (mm)	s (mm)	ØD (mm)	Effective Area (cm <sup>2</sup> )	
		30	60	90	120					
25	1"	40	275	395	520	-	33,7	2,6	88,9	54
32	1 1/4"	40	285	405	530	-	42,4	3,2	88,9	54
40	1 1/2"	40	295	415	535	-	48,3	3,2	88,9	54
50	2"	40	300	420	555	710	60,3	3,6	114,3	89
65	2 1/2"	40	315	430	560	715	76,1	3,6	114,3	91
80	3"	25	315	435	585	725	88,9	4,0	139,7	141
100	4"	25	320	450	585	750	114,3	4,5	165,0	196
125	5"	25	335	465	595	765	139,7	5,0	193,7	272
150	6"	25	345	475	615	790	165,0	5,0	219,1	346
200	8"	25	395	520	685	860	219,1	4,5	323,9	572
250	10"	25	420	585	760	950	273,0	5,6	355,6	829

Please consult with our technical department for different working conditions and design parameters.

Movements are non-concurrent

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