

CUSTOMIZED PRODUCTION

RUBBER EXPANSION JOINT TYPE C-31

LATERAL EXPANSION JOINT
DN 300 – DN 3600

STRUCTURE TYPE C-31 / RUBBER BELLOWS PN 4, 10, 16

- Lateral expansion joint consisting of a rubber bellows and press-on retaining flanges and tie rods
- Tie rods (external restraints) to absorb reaction force from internal pressure
- Alternative: Tie rods (external and internal restraints) to absorb reaction force from internal pressure or vacuum
- Available in various bellows geometries and special lengths
- Elastic robust bellows in various rubber grades
- Synthetic fibre reinforcement
- Full-faced self-sealing rubber flanges with drilling for through bolts
- Electrical impedance 10^3 to 10^6 Ohm (DIN IEC 93, VDE 0303-30)

Rubber grade*	EPDM	NBR	CIIR
Colour code	orange	red	white
Possible uses	Cooling, sea, brackish water, acids, lyes	hydrocarbon containing liquids	Drinking water

*Check or inquire about the resistance of the rubber grade to temperature and medium.

Technical design			
DN	DN 300 – 2400	DN 300 – 1000	DN 300 – 1000
Pressure rate	PN 4	PN 10	PN 16
Max. perm. operating pressure	4 bar*	10 bar*	16 bar*
Max. perm. temperature	+100 °C	+100 °C	+100 °C
Bursting pressure	≥ 15 bar	≥ 30 bar	≥ 48 bar
Vacuum operation	with vacuum supporting ring (at permanent vacuum)		

Max. operating pressure to be set 30 % lower for shock loads.

*Please consider a decrease of pressure due to temperature (see technical annex).

FLANGES / VERSIONS

- Press-on retaining flanges with stabilizing collar
- With ears or with second bolt circle to carry the tie rods (depending on DN and PN)
- Flange drilling for through bolts

	Standard	Others
Dimensions	EN 1092	ANSI, BS etc. Connection dimensions see technical annex page 213 – 215
Materials	1.0038 (S235JR) 1.0577 (S355J2)	stainless steel etc.
Corrosion protection	hot-dip galvanized	special varnish and 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 thermal and mechanical tension in pipes and their system components, e.g.
 - pumps
 - condensers
- to compensate for installation inaccuracies
- to compensate for ground and foundation settlement
- as installation and dismantling aid
- power station technology
- process plant engineering

TIE ROD RESTRAINTS

- Tie rods carried on spherical washers and conical seats

Materials

Standard: tie rods 8.8

Others: stainless steel

Corrosion protection

Standard: hot-dip galvanized

Others: special coating, etc.

CERTIFICATES

- CE (PED 2014/68/EU)
- Drinking water
- TÜV Süd (KTA)

ACCESSORIES

- Vacuum supporting ring
- Internal guide sleeve
- Protective tube

DIMENSIONS STANDARD PROGRAM

DN	Pressure rate bar	Bellows		without vacuum supporting ring					with vacuum supporting ring				
		Ø di Bellows inner Ø tolerance ±1% mm	h Rubber- flange thickness mm	BL mm at rated pressure			Ø W Convolution Ø unpressuri- zed mm	Weight approx. kg	BL mm at rated pressure			Ø W Convolution Ø unpressuri- zed mm	Weight approx. kg
				4bar	10 bar	16 bar			4bar	10 bar	16 bar		
300	4/10/16	300	15	250	250	250	413	86	250	250	250	413	92
350	4/10/16	350	15	250	250	250	463	100	250	250	250	463	108
400	4/10/16	400	15	250	250	250	513	118	250	250	250	513	121
450	4/10/16	450	15	250	250	250	563	132	250	250	250	563	137
500	4/10/16	500	15	250	250	275	613	144	250	250	275	613	149
600	4/10/16	600	15	250	250	275	713	173	250	250	275	713	205
700	4/10/16	700	15	250	275	275	813	255	250	275	275	813	263
750	4/10/16	750	15	250	275	300	863	294	250	275	300	863	343
800	4/10/16	800	20	275	275	300	923	357	275	275	300	923	363
900	4/10/16	900	20	275	300	325	1023	397	275	300	325	1023	453
1000	4/10/16	1000	20	275	300	325	1123	539	275	300	325	1123	555
1100	4	1100	20	325			1268	545	325			1310	565
1200	4	1200	20	350			1368	665	350			1410	715
1300	4	1300	20	350			1468	800	350			1510	830
1400	4	1400	20	350			1568	970	350			1610	1005
1500	4	1500	20	350			1668	1070	350			1710	1210
1600	4	1600	20	350	on request	on request	1768	1300	350	on request	on request	1810	1340
1700	4	1700	20	350			1868	1360	375			1910	1515
1800	4	1800	20	350			1968	1530	375			2010	1575
2000	4	2000	20	375	on request	on request	2168	1875	375	on request	on request	2210	1935
2100	4	2100	20	375			2268	2115	375			2310	2175
2200	4	2200	25	375			2378	2435	400			2420	2495
2300	4	2300	25	375			2478	2645	400			2520	2605
2400	4	2400	25	375			2578	2865	400			2620	2940

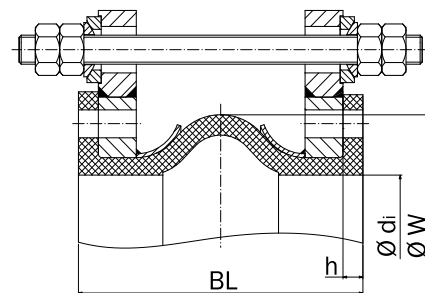
Values are based on flange dimensions according to EN 1092 PN 10. Please contact us for further flange dimensions.

Lengths (BL) may vary and depend on flange drilling, operating pressure, possible vacuum, operating temperature.

Larger sizes (DN) on request.

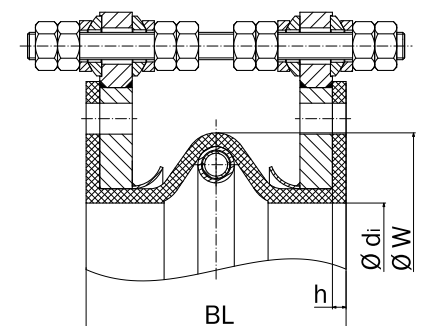
MOVEMENT COMPENSATION / VERSIONS

DN	without vacuum supporting ring	with vacuum supporting ring
	Δ lat Lateral movement ±mm	Δ lat Lateral movement ±mm
300	30	30
350	30	30
400	30	30
450	30	30
500	30	30
600	30	30
700	30	30
750	30	30
800	30	30
900	30	30
1000	30	30
1100	30	35
1200	30	35
1300	30	35
1400	30	35
1500	30	35
1600	30	35
1700	30	35
1800	30	35
2000	30	35
2100	30	35
2200	30	35
2300	30	35
2400	30	35



Type C-31

Lateral expansion joint, external restraints



Type C-31

Lateral expansion joint, external and internal restraints, with vacuum supporting ring