

## Rubber-expansion joint - Type RS-2

Lateral-expansion joint DN 25 - DN 300



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### Structure type R-2

Lateral-expansion joint, consisting of a rubber bellows with rotating flanges and tie rods (outer restraints) to absorb reaction force from internal pressure

### Applications

- or reducing thermal and mechanical tension in pipes and their system components, e.g.
  - pumps
  - compressors
  - motors
- for muffling vibrations and noise
  - at appliances
  - in cooling water and lub oil pipes
- for compensating lateral movement
- to compensate for installation inaccuracies
- to meet fire protection regulations
- shipbuilding industry
- in heating plants

### Rubber bellows PN 16

- Flat-convoluted molded bellows in various rubber grades
- Steel wire cord reinforcement
- Wire-reinforced self-sealing rubber rim
- Electrical impedance < 100 Ohm (DIN IEC 93, VDE 0303-30)

Rubber grade*	Color code	Possible uses
<b>EPDM</b>	<b>orange/blue</b>	<b>Hot water, acids, lyes</b>
<b>NBR</b>	<b>red/blue</b>	<b>Oil</b>

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

Technical design	
Max. perm. operating pressure	<b>16 bar*</b>
Max. perm. temperature	<b>+130 °C</b>
Bursting pressure	<b>≥ 50 bar</b>
Vacuum operation	<b>DN 25-50 without vacuum supporting ring, DN 65-300 with vacuum supporting ring</b>

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

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

### Flanges

#### Version

- Flanges with stabilizing collar and ears to carry the tie rods
- Flange drilling for through bolts, DN 25 with Drill holes
- Special turned groove for rubber rim

#### Dimensions

Standard: DN 25 - DN 150 (PN 16)  
 DN 200 - DN 300 (PN 10)  
 DN 25 - DN 300 (PN 6)  
 according to EN 1092

Others: DIN EN, ANSI, BS etc.

Connection dimensions see technical annex

#### Materials

Standard: 1.0038 (S235JR)  
 Others: 1.4541, 1.4571 etc.

#### Corrosion protection

Standard: electrogalvanized  
 Others: hot-dip galvanized, special varnish, special coating, etc.

### Tie rod restraints

- DN 25 – DN 150 Tie rods carried on silencing rubber sockets
- DN 200 – DN 300 Tie rods carried on spherical washers and conical seats

#### Materials

Standard: tie rods 8.8  
 Others: stainless steel

#### Corrosion protection

Standard: electrogalvanized  
 Others: hot-dip galvanized

### Accessories

- Vacuum supporting ring
- Internal guide sleeve
- Flame-proof protective cover
- Protective tube

### Certificates

- CE (PED 97/23/EC)
- Bureau Veritas
- Germanischer Lloyd
- Lloyd's Register of Shipping
- TÜV/DIN 4809 (DN 25-200)
- Det Norske Veritas
- MED

## Dimensions standard program

DN	BL	Pressure rate	Ø di	Ø C	Ø E	Ø W	PN	Ø D	b	H
	mm	bar	Bellows inner Ø	Raised face outer Ø	Raised face inner Ø	Convolution Ø unpressurized	Flange connection EN 1092	Flange outer Ø	Flange thickness	Flange height
25	130	16	31±3	72	39	88	16	115	16	210
32	130	16	31±3	72	39	88	16	140	16	220
40	130	16	39±3	81	45	96	16	150	16	230
50	130	16	49±3	95	56	107	16	165	16	240
65	130	16	65±3	115	72	123	16	185	18	260
80	130	16	77±3	127	84	135	16	200	20	300
100	130	16	100±3	151	109	160	16	220	20	350
125	130	16	127±3	178	133	184	16	250	22	385
150	130	16	153±3	206	161	212	16	285	22	420
200	130	10	202±3	260	209	260	10	340	25	465
250	130	10	252±3	313	262	313	10	395	25	520
300	130	10	303±3	363	312	363	10	445	25	570

From DN 200 pressure rate 16 bar also available with flanges PN 16.

## Movement compensation

DN	Δ lat Lateral movement	Permissible vacuum without supporting ring for length bar absolute	Weight approx. kg
	± mm		
25	15	-	4.9
32	15	0	5.1
40	15	0.2	5.6
50	15	0.2	6.3
65	15	0.4	7.7
80	15	0.4	10.4
100	15	0.4	12.4
125	15	0.4	16.5
150	15	0.4	19.2
200	15	0.4	22.0
250	15	0.5	30.0
300	15	0.6	37.0

## Note

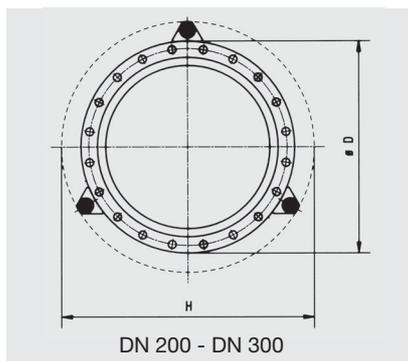
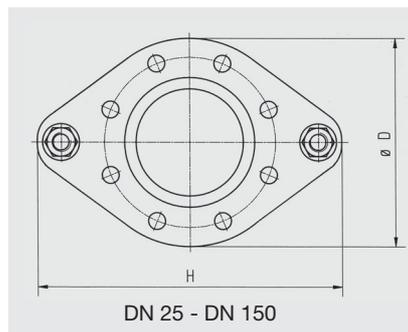
Please comply with the general technical instructions regarding reaction force, moving force, fixed point load, installation instructions etc.

Subject to technical alterations and deviations resulting from the manufacturing process.

Chemicals used for water treatment (particularly in heating systems and coolant systems) can corrode the materials of the rubber expansion joint.

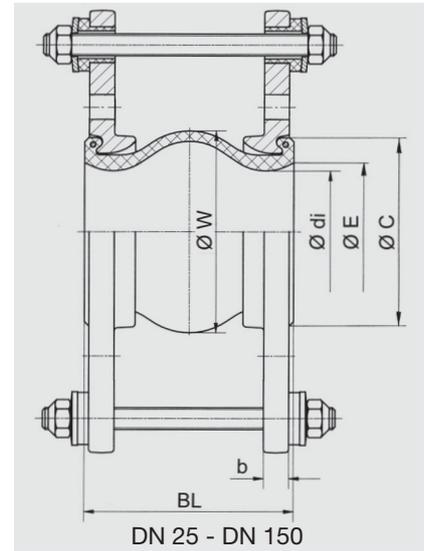
According to VDI Directive 2035, and VGB R 455, the manufacturer of the chemicals must state the data indicating that the materials used in the expansion joint, especially for the rubber bellows, will not be damaged by the chemicals.

## Flange versions



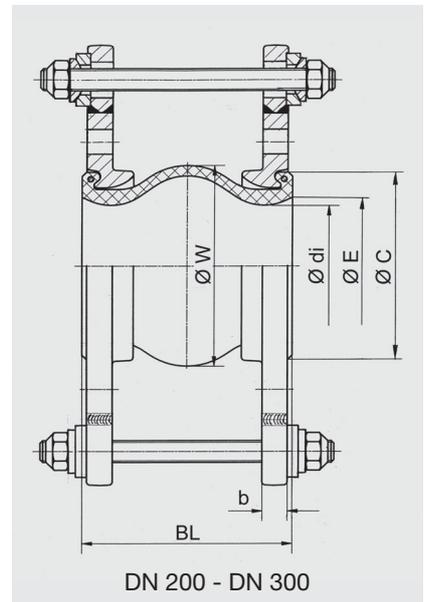
Number of tie rods depending on pressure

## Versions



### Type RS-2

Tie rods, outer restraints, carried on silencing rubber sockets



### Type RS-2

Tie rods, outer restraints, carried on spherical washers and conical seats