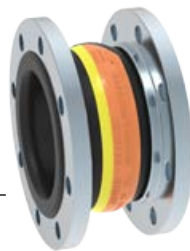


# RUBBER EXPANSION JOINT TYPE AR-1

## UNIVERSAL EXPANSION JOINT DN 20 – DN 400



### STRUCTURE TYPE AR-1 / RUBBER BELLOWS PN 25

- Universal expansion joint, consisting of a rubber bellows and rotatable flanges
- Highly elastic molded bellows in various rubber grades
- High-tensile synthetic fibre reinforcement
- Wire-reinforced self-sealing rubber rim
- Electrical impedance  $10^3$  to  $10^6$  Ohm (DIN IEC 93, VDE 0303-30)

<b>Rubber grade*</b>	EPDM	NBR
<b>Colour code</b>	orange/yellow	red/yellow
<b>Possible uses</b>	Hot water, acids, lyes	hydrocarbon containing liquids

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

Technical design	
Max. perm. operating pressure	25 bar*
Max. perm. temperature	+130 °C
Bursting pressure	≥ 75 bar
Vacuum operation	DN 20 – 50 without vacuum supporting ring, DN 65 – 400 with vacuum supporting ring

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

- Rotable flanges with stabilizing collar
- Flange drilling for through bolts
- Special machined groove for rubber rim

	Standard	Others
<b>Dimensions</b>	EN 1092	ANSI, BS etc. Connection dimensions see technical annex page 213 – 215
<b>Materials</b>	1.0038 (S235JR)	1.4541, 1.4571 etc.
<b>Corrosion protection</b>	electrogalvanized	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 reducing thermal and mechanical tension in pipes and their system components, e.g.
  - pumps
  - compressors
- for muffling vibration and noise
  - at appliances
  - in cooling water and lube oil pipes
- for compensating axial, lateral and angular movement
- for compensating simultaneous movement in cooling water pipes
- to compensate for installation inaccuracies
- in sprinkler systems

### CERTIFICATES

- CE (PED 2014/68/EU)

### ACCESSORIES

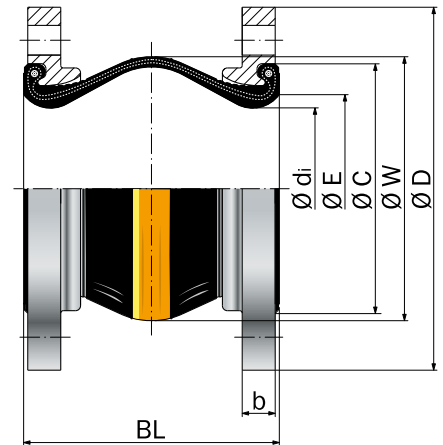
- Vacuum supporting ring
- Internal guide sleeve
- Flame-proof protective cover
- Protective hood
- Protective tube

## DIMENSIONS STANDARD PROGRAM

DN	BL	Pressure rate	Ø dj Bellows inner Ø	Ø C Raised face outer Ø	Ø E Raised face inner Ø	Ø W** Con- volution Ø	PN* Flange connection EN 1902	Ø D Flange outer Ø	b Flange thickness
20	100	25	22 ± 3	51	30	55	25	115	16
25	100	25	22 ± 3	51	30	55	25	115	16
32	125	25	31 ± 3	72	39	78	25	140	16
40	125	25	39 ± 3	81	45	86	25	150	16
50	125	25	49 ± 3	95	56	97	25	165	16
65	125	25	65 ± 3	115	72	113	25	185	18
80	150	25	77 ± 3	127	84	135	25	200	20
100	150	25	100 ± 3	151	109	160	25	235	20
125	150	25	127 ± 3	178	133	184	25	270	22
150	150	25	153 ± 3	206	161	212	25	300	22
200	175	25	202 ± 3	260	209	265	25	360	25
250	175	25	252 ± 3	313	262	318	25	425	25
300	200	25	303 ± 3	363	312	373	25	485	25
350	200	25	344 ± 3	423	360	420	25	555	30
400	200	25	396 ± 3	474	410	460	25	620	30

\*also available with flanges PN 16 and PN 10.

\*\*unpressurized



### Type AR-1

Universal expansion joint, without restraint

## MOVEMENT COMPENSATION

DN	Δ ax Axial movement		Δ lat Lateral movement	Δ ang* Angular movement	A** Effective bellows cross sectional area at 25 bar	Permissible vacuum w/o supporting ring at length BL bar absolute	Weight approx. kg
	Compression - mm	Elongation + mm					
20	20	10	10	25	0	-	2.3
25	20	10	10	25	0	-	2.3
32	35	10	15	25	0	0	3.3
40	35	10	15	25	1	0.5	3.7
50	35	10	15	25	1	0.4	4.4
65	35	10	15	25	1	0.5	4.9
80	40	10	15	20	2	0.6	6.5
100	40	10	15	15	5	0.6	9.5
125	40	10	15	15	8	0.5	13.0
150	40	10	15	12	41	0.4	15.3
200	45	15	15	8	54	0.6	21.8
250	45	15	15	7	72	0.6	31.6
300	45	15	15	6	226	0.6	41.6
350	45	15	15	5	460	0.65	56.7
400	45	15	15	5	880	0.8	69.0

\* Larger Δ ang possible for compressed installation length.

\*\*Effective bellows cross sectional area is a theoretical value.

Please inquire for simultaneous (different) movement.