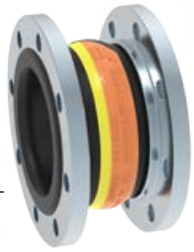
RUBBER EXPANSION JOINT TYPE AR-1

UNIVERSAL EXPANSION JOINT DN 20 – DN 400



STRUCTURE TYPE AR-1 / RUBBER BELLOWS PN 25

- Universal expansion joint, consisting of a rubber bellows and rotable 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)

Rubber grade*	EPDM	NBR
Colour code	orange/yellow	red/yellow
Possible uses	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**
Dimensions	EN 1092	ANSI, BS etc. Connection dimensions see technical annex page 213 – 215
Materials	1.0038 (S235JR)	1.4541, 1.4571 etc.
Corrosion protection	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)

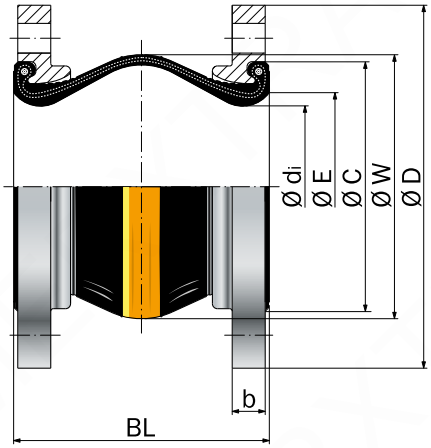
ACCESSORIES

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

DIMENSIONS STANDARD PROGRAM

DN	BL mm	Pressure rate bar	Ø dj Bellows inner Ø mm	Ø C Raised face outer Ø mm	Ø E Raised face inner Ø mm	Ø W** Convolution Ø mm	PN* Flange connection EN 1902	Ø D Flange outer Ø mm	b Flange thickness mm
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 Compression - mm	Δ ax Axial movement Elongation + mm	Δ lat Lateral movement ± mm	Δ ang* Angular movement ± ∢ degrees	A** Effective bellows cross sectional area at 25 bar cm²	Permissible vacuum w/o supporting ring at length BL bar absolute	Weight approx. kg
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.